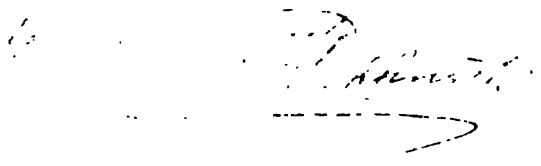

SECOND EDITION

# A COMPLETE SYSTEM

OF

# HARMONY

BY

H. E. PARKHURST

Containing a thorough practical treatment of all chord-formations and connections, an exhaustive analysis of suspension and other auxiliary effects, and a comprehensive discussion of organ-point, modulation and cadence, with exercises therein; constituting a full preparation for Counterpoint.



CARL FISCHER, PUBLISHER
COOPER SQUARE
NEW YORK

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## Part I.

## THE FUNDAMENTAL CHORDS.



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## Part II.

## THE AUXILIARY CHORDS.

# PREFACE

THE DISTINCTIVE FEATURES OF THIS WORK MAY BE BRIEFLY STATED.

THE extended and systematized treatment of the Auxiliary Chords is prompted by the conviction that a modification is sorely needed in the prevalent method of harmonic teaching. The vast majority of pupils, leaving Harmony with little or no drill except in the Fundamental Chords, plunge into Counterpoint and Fugue so ill-prepared for the requirements of these advanced studies, that their most laborious efforts produce only painfully unmusical results. At present, the pupil sees little relation between his chords of Harmony and the chord-formations of actual composition, and this is because he has not been taught how to elaborate his fundamental harmonies with auxiliary effects.

The principles of Modulation have been presented in a manner that will, it is hoped, make what is the most subtle feature of composition more intelligible and attractive to the pupil. If in many text-books the true philosophy of the matter has not been misconceived, it has certainly been strangely misrepresented.

Organ-point is generally treated in so superficial a manner, that it will be a surprise to some that it can be reduced to a scientific system which shows it to be amenable to the laws of Harmony, instead of being an authorized license to violate almost all the pre-established requirements of chord progression. Its treatment in this work is the first attempt, so far as the author is aware, to bring under distinct rules this effective species of composition, and to afford to the pupil a method of learning it.

Special emphasis, by means of special exercises, has been put upon the need of distinct knowledge of the effect of chords *without playing them*,—a matter strangely ignored in some text books—the neglect of which makes all study of musical theory *absolutely profitless*.

As a means of bringing the contents of each chapter under distinct review, a Summary is appended, both for self-examination and for the teacher's use.

Insufficient drill in elementary harmony—which, as Rheinberger was wont to remark, is nine-tenths of the whole art—in no small degree accounts for the comparative shallowness of modern composition; and the very best preparation for expressing one's individuality in musical thought is rigid discipline in those fundamental harmonic principles that yield to no passing fashion, but underlie all thoughtful music, be it classical or ultra-modern.

THE AUTHOR.

*New York, July 31, 1903.*

# INTRODUCTION.

DEFINITIONS.

Every concussion of air affecting the ear produces *sound.*

Sounds are of two distinct kinds, viz., *noise* and *tone.*

Single impacts upon the ear, or a series of impacts following more or less rapidly, but irregularly, produce *noise;* as, a single clap of thunder, or a reverberation of thunder, which is produced by an irregular succession of echoes.

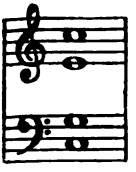
A succession of impacts upon the ear, following rapidly and *equidistant,* produces *tone;* as, the vibrations of a violin string. *Rapidity* and *equidistance* of vibrations are the conditions of *tone;* i. e., *musical sound.* The *pitch* of the tone varies with the rapidity, the lowest distinguishable tone having about 16 vibrations in a second, and the highest, from 16,000 to 33,000.

A single tone is *musical,* but it is not *music;* it is the basal atom of music.

*Music* is the intelligent combination of tones. Two sorts of combination are possible, viz., *successive* and *simultaneous.*

*Melody.* The musical sense of successive single tones is called *melody.*


*Harmony.* The musical sense of simultaneous tones is called *harmony.*



This latter combination constitutes a chord. Radically distinct, each is the necessary supplement of the other. They are the soul and body of music. Melody without harmony is disembodied spirit. Harmony without melody is lifeless.

Simultaneous tones, producing an agreeable effect, constitute a ***concord*** or ***consonance;*** producing a disagreeable effect, a ***discord*** or ***dissonance.*** Concords are not all equally agreeable, neither are discords all equally disagreeable. (The list of concords—or consonances—and discords—or dissonances—will be given later).

It may seem incongruous that any effect, in itself disagreeable, should be admissible in music; it is equally incongruous that salt, by itself utterly distasteful, should be the necessary ingredient of all food. Discordance is simply *salt for seasoning.* Harmony would be insipid without it.

If any one chooses to apply the term *dissonance* to those harsh effects which are admissible in music, and the term discord to those effects which are too harsh to be serviceable, there is no law against such a classification, nor is there any authority for it, inasmuch as discord (dis-corda) and dissonance (dis-sonans) from their etymology have identically the same meaning. We shall see, later, how the discord is softened or concealed to the degree of being palatable.

*Harmony.* This word, already partially defined, in its relation to melody, is used in three senses, closely allied, yet quite distinct. In the first and most popular sense, harmony is equivalent to concord,—harmonious means the perfectly agreeable, and the inharmonious involves more or less of discordance. But the musical sense of simultaneous sounds does not limit us to pure *concords.* There are many chords, tinged more or less with discordance, whose use greatly enhances the aggregate effect of music; and in a technical sense *all* combinations of tones, purely concordant or not, which are serviceable in the expression of musical sense, are termed *harmonies*: as when we speak of the "harmonies" of a composition, meaning the ***chords.*** In the third use of the word, Harmony constitutes the first grand division of Musical Theory, and is the subject of the present work. Used in this sense, *Harmony is the science of fundamental and auxiliary chords in their individual construction and their proper connection one with another.* More briefly expressed, it is *the science of the construction and connection of chords.*

In its three senses

Harmony means —concord.
" " —chord.
" " —the science of chords.

This is the scope of our present work, the foundation of all further theoretical study. It will be well for the pupil to understand the nature and the limits of his present undertaking, that at its conclusion he may not be disappointed because he has not learned what

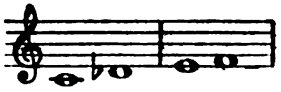
lies altogether beyond the province of Harmony. Tones are to the composer what colors are to the painter, and he must first learn the colors, their mixture in single chords, their combination in a flow of harmonies, before he can expect any results that deserve the name of original composition.

Harmony, as the science of chords, is often called the grammar of music. But it is more. It is also the spelling book. The several tones represent the *letters* of the musical language, their combination in chords spells out the *words*, and lastly the proper connection of the chords is analogous to the grammatical construction of language. We shall first have to learn how chords are formed, i. e., spelled, before we can properly connect them.

In the definition of *melody* and *harmony* it became evident how meaningless the latter is, except as it is animated by the former. But it is to be observed that the part or voice that furnishes the melody (usually the highest part) is also a *constituent part of the harmony;* that is, the tones of the melody are at the same time elements of the successive chords underlying the melody; (for example, the soprano part of "Old Hundred"). But our present purpose will be best attained by subordinating, for the time being, the *melodic* quality of the upper part to its *harmonic* character, so that throughout Harmony, and especially at the first, the exercises will have scarcely more than a *tinge* of melodic effect. But while the highest tone of each chord will be treated primarily as an element of the harmony, the pupil is still to give to the highest part as much of the melodic quality as is consistent with the harmonic requirements. A more free, melodic character in the highest part will follow in due time, and the pupil will then have acquired a correct treatment of the underlying harmony.

### INTERVALS.

An interval, in music, is the distance between two tones. The distance from any tone to the next *clearly individual* tone above or below is called a semitone, or a half-step; as, from C to D♭. E to F.

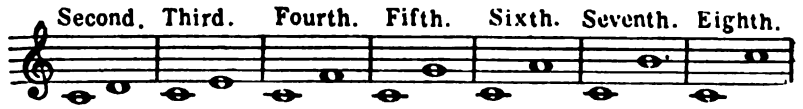


A musical sound can indeed be produced between C and D♭, but, as relative to these, it has no *individuality;* it will be regarded, not as a *distinctive* tone, but as a defective C (being too high) or a defective D♭ (being too low).

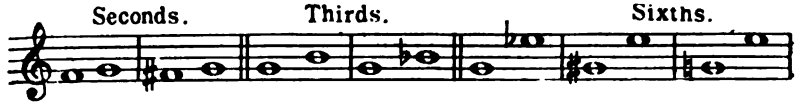
(Note. It is doubtful whether the distance between two clearly distinct tones has ever been less than what is now called a semitone. It is true, that in the Indian music we find the octave divided into 22 parts, instead of 12, as with us, by which they obtain a quarter-tone instead of a semitone as their smallest distance. But this subdivision is purely theoretical, and does not exist in their practice.)

The sum of two semitones, as from C to D, or from E to F#, is called a *tone* or a step. This word *tone* thus has two meanings: first. that of musical sound; secondly, that of distance, as the sum of two semitones. This use of the word as a measure of distance is authorized by the word *diatonic,* in which *tone* (from the Greek, *tonos*), has the same significance. This double sense of the word will not be found to involve any ambiguity.

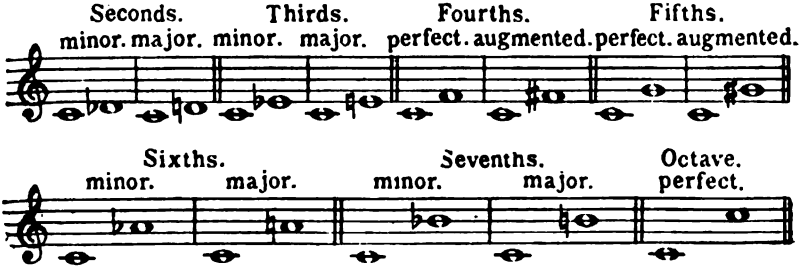
For the sake of uniformity, all intervals are reckoned from the *lower tone upward,* unless otherwise expressly stated. An interval is reckoned on the staff by counting the intervening lines and spaces between the two notes, and adding those on which the notes themselves are placed. Thus from C to D is called an interval of a *second,* from C to E a *third,* etc., as follows:—




The interval has the same name even if either of the tones be raised or lowered by an accidental, thus:



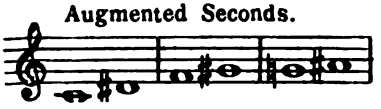

Accordingly, intervals of the same name are not always of the same size; and to express the intervals precisely they must have a further designation. The following list presents two sizes of each interval within the limits of an octave, beginning with C:



The two sizes differ in each case by a semitone, and in all but two cases the less is called minor, the greater, major. The two exceptions are in the *fourths* and *fifths*, where the terms *perfect* and *augmented* are used.

There is one more *augmented* interval which must be noticed; viz., the *augmented* second, thus:

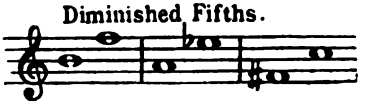
Augmented Seconds.



This peculiar interval will demand our attention later.

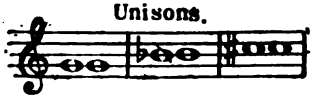
Another important interval is a species of a *fifth*, which is, however, a semitone less than the *perfect fifth* and is called the diminished fifth, thus:

Diminished Fifths.

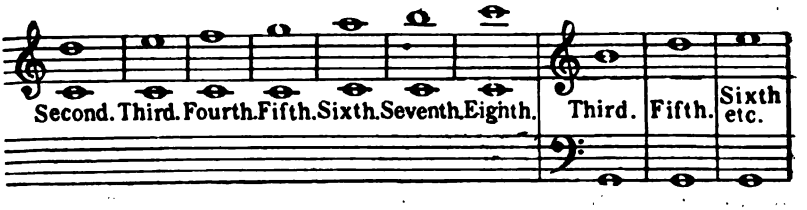


Tones identically situated are said to be *in unison*.

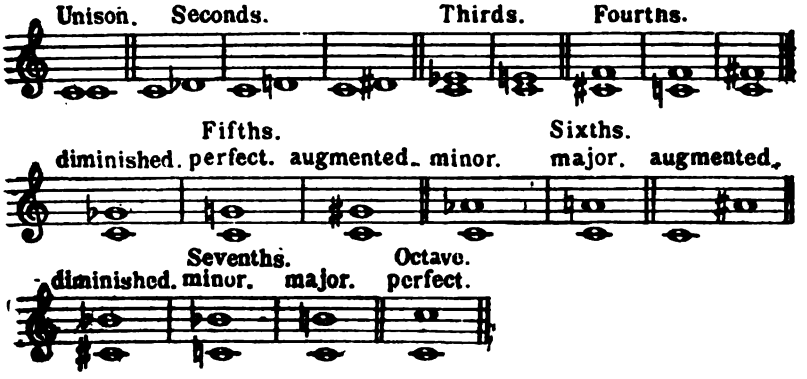
Unisons.



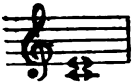
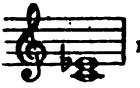
From any letter to the same letter above is an *octave* or *eighth*. From C to the second D above is strictly a *ninth*, but there is such identity in the quality of every tone and that of its octave that for all present harmonic purposes we can reckon this interval as a *second;* similarly an interval of a tenth is regarded as a third, and so on; and however many octaves intervene, the interval is reckoned as being *within the limits of one octave;* thus:




The following is a list of the most commonly occurring intervals, and the only ones with which the pupil need concern himself at present.




(For a full list of all intervals see Appendix (A)).

A word must be said concerning the proper manner of learning the above intervals. An interval has *not* been learned when the pupil is merely able to tell how many tones and semitones are comprised within the distance; as, for example, that there are two semitones in a *major second*, two whole tones in a *major third*, etc.; this is mathematically correct, but an utterly inadequate knowledge of the intervals. Again, to see in the interval from C to G,  merely a *fifth*, from the bare computation of lines and spaces, without associating with this interval the *quality* of a *perfect fifth*, which distinguishes it from every other possible interval—such a process misses entirely the recognition of the most interesting aspect of the interval, its *real individuality and character*. Thus it means nothing to know that a *major third* is greater by a semitone than a *minor third*. The real difference of these two intervals is not in the *size*, but in the *quality* of the two kinds of *thirds*. Play the major third  then depress the E to Eb;  notice the strong, vigorous, masculine quality of the major, and the weak, almost feminine quality of the minor; compare also the following:

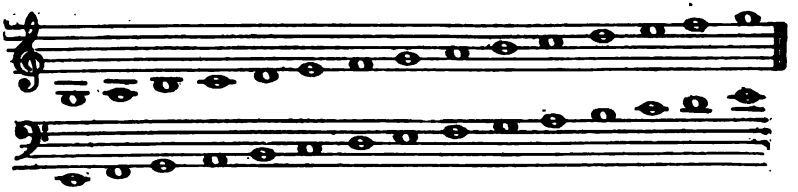
By discovering these diverse qualities of the intervals, one comes truly to *know* them, and only such knowledge can insure success in the study of Harmony, for it is a constant study of *combinations* of tones. Intervals can be computed, with absolutely no sense of their

effect, and a large proportion of Harmony students are simply *computing* their intervals! The result is, that while the exercises are written with some degree of mechanical correctness, they find on completing Harmony that they are confronted by an impenetrable barrier, forbidding any further progress. If they do not then give up the study in disgust, they proceed to "review" by precisely the same process!

It cannot be too strenuously urged upon the pupil to begin this work with the resolve to *know the effect* of every combination he writes, and to associate it with the writing *every time;* that is, to *imagine the effect constantly,* and to play the exercise only after he has as clear an idea of it as possible, and thus correct his idea of the effect by the actual sound. In this way the study of "Theory" will increase, rather than diminish, in interest. To this end let the pupil resolve to become *as independent of the piano as possible,* in getting a clear idea of his chords.

At each lesson the teacher should play the different intervals, major and minor, and have the pupil name them, so that he will know them by *sound,* and not merely by *sight.*

As an exercise in the study of intervals, let the pupil analyse the following series of tones, ascertaining the interval from the first to each succeeding, then from the second to each succeeding, then from the third, etc., always reckoning a *ninth* as a *second,* as before explained. This will bring to view all of the usual intervals.



After this analysis, go through the series again, finding all the *minor seconds, major seconds, minor thirds, major thirds, perfect fourths,* etc., through the list of intervals.

## THE SCALE.

*Scala,* from which the word *scale* is derived, means a *ladder;* and in its application to music it means, literally, any ascending or descending series of tones at equal or nearly equal intervals from each other. When the intervals exceed that of a *second,* the series of tones is called an *arpeggio,* from *arpa,* meaning a *harp;* an arpeggio being such a succession of tones as is most characteristic of the harp.

The scale, in its usual sense, means a series of eight tones, with intervals of a major or minor second (i. e., tones or semitones) between adjacent tones. For the most part the interval between adjacent tones is a *major second,* that is, a *whole tone,* hence called the *diatonic* scale (from the Greek words, *dia,* and *tonos,* by means of, or through, whole tones) in which this interval predominates.

### The Major and Minor Diatonic Scales.

The diatonic scale is of two sorts, according to the location of the semitones. These two sorts are called the major and the minor. In the major diatonic scale, with which we have principally to do, the semitones occur between the third and fourth, and between the seventh and eighth tones, thus:

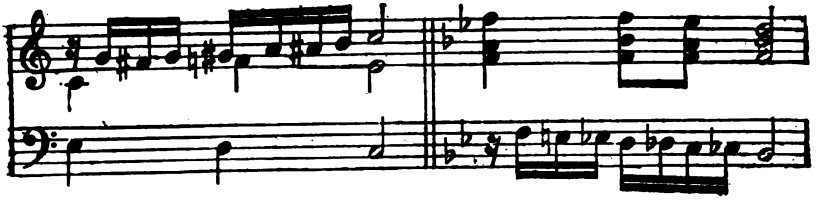

This is the invariable construction of the *major diatonic scale.* To become familiar with its formation, let the pupil construct the same scale, beginning upon the following letters of the staff, viz.: G, D, A, E, F, B♭, E♭, A♭, using *sharps* or *flats* as may be necessary to preserve the correct intervals.

The formation of the *minor diatonic scale,* and the reason for the use of the terms *major* and *minor,* will be given in a subsequent chapter.

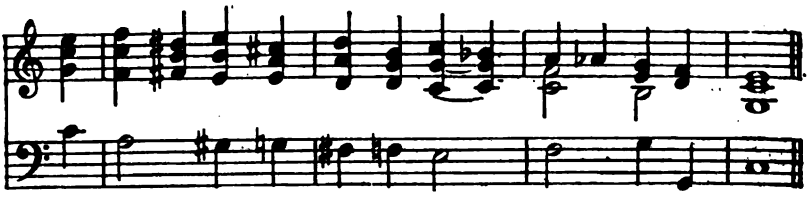
### The Chromatic Scale.

This is the series of successive semitones or half-steps:

melody and harmony do not move in this scale, but only in the diatonic scale; therefore it does not serve practically as a scale, like the major and minor diatonic scales; it is rather the filling out of all the half-steps in any diatonic scale that happens to be used, has no signature of its own, occurs only exceptionally, and almost exclusively in short fragments in elaborated music, thus:



Such passages as the above, and in general any passage, in which an unusual number of accidentals are used in one or more voices to embellish the single harmonies of the scale, are called chromatic.



It is expected that the student of Harmony will have, at this point, not only a clear idea of the *major diatonic scale,* so that he can construct the same, beginning with any of the above-named letters, either on the staff or on the pianoforte, but also a fair knowledge of the most commonly used intervals, as regards their *computation* and *effect.* With this preliminary knowledge he will be prepared to enter upon the work of the following chapters.

### SUMMARY.

*Sound.*—Distinction between *noise* and *tone.*—The two conditions necessary for tone.—What determines the pitch.—About how many vibrations in the lowest and the highest tones.—Define *music.*—Define *melody.*—Define *harmony.*—Distinction of concord and discord.—Three senses of the term *Harmony.*—Define *interval.*—Define *semitone* and *tone.*—How intervals are reckoned.—Difference in size between major and minor intervals.—Illustrate two sizes of each interval, from a *second* up to a *seventh.*—Define *augmented second,* also *diminished fifth.*—Define *unison* and *octave.*—How intervals greater than an octave are reckoned.—Every interval to be known by its *quality* or *effect,* and not merely by its computed size.—Independence of the piano to be aimed at.—Meaning of *scale* and *arpeggio.*—Derivation of *diatonic.*—Formation of *major diatonic scale.*—The *chromatic scale,* and how used.

The "Summary" at the end of each chapter affords to the pupil the means of examining himself in the contents of each chapter.

## HARMONY.

The term "Harmony" has already been defined as *the Science of the construction and connection of fundamental and auxiliary chords.*

This definition suggests the proper division of the present work into two parts.

# PART I.

## THE FUNDAMENTAL CHORDS.

The first and most general analysis of the fundamental chords classifies them into two sorts; first, those which show no definite, inherent connection with other chords, and thus do not determine in any degree what chord shall follow them. These are called the *independent* chords. Secondly, those which do show an inherent connection with other chords, and thus to a degree determine what chord shall follow them. These are called the *dependent* chords.

To the first class belong in general the "common chords," which are the first to be explained.

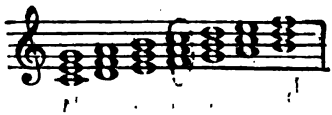
### CHAPTER I.

### THE COMMON CHORD.

The simplest, most elementary combination of tones, which serves as the basal combination underlying all harmonic formations, is *the common triad*. *Triad* means *three-foldness*, whether of tones or of any other object. Any three tones constitute a triad. But that combination which is specifically called *"the common triad"* consists of any tone of a diatonic scale, to which is added its *third*, and its *fifth* in the scale.

The triad is named from its lowest letter, which is also called *the root* or fundamental of the triad. Thus the above is the triad of C.

As there are seven distinct tones in the scale, and each can be the root of a triad, we can have seven distinct triads, as follows:



As the greater part of all fundamental harmonies are expressed in the above series, it is desirable to examine them closely, and learn their similarities and their differences.

(Let the pupil first play them carefully, one by one, and notice their effect; then let him begin the series again, and *recall* the effect, as nearly as possible, of each in succession. By this discipline he will acquire a clear idea of the musical sense of a chord without the necessity of playing it.)

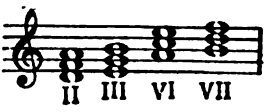
The more carefully they are compared, the more distinct is the effect of each from that of all the others, while in them all is also evident a similarity. Each is similar to, and each is distinct from, all the rest. The similarity is due to a single cause, viz., that they are all formed in the same way, by adding to each root the *third* and *fifth* above it; and all *thirds* have a similarity to each other, and also all *fifths*. This then accounts for the manifest uniformity in the effect of all the triads.

The variety in the triads is due to two causes; first, while there is a certain quality of effect common to *all triads*, there is also, as we have already seen, a marked difference between a major and a minor third; and some of the triads have major, and others have minor thirds. (Let the pupil classify the triads according to the two kinds of thirds, and play each group by itself.) Again, while six of them have *perfect fifths*, one (on the 7th of the scale), *has a diminished fifth. The different kinds of thirds* and *fifths* produce in part the difference in effect. Secondly, a little examination of the scale shows that it is not simply a series of tones differing merely in pitch (which is simply a *mechanical* difference), but that these tones have, *in their scale-relation to each other, distinct individuality of character.* This is most evident in the case of the first tone, the *keynote* of the scale, which is plainly more important than any other. By carefully playing the scale, one learns to recognize more and more the *distinctive quality* of each tone. The seven tones of the scale may be compared to the seven primary colors, and in the *variety of coloring* of the scale-tones we find the same reason for the diversity of effect in the triads. The pupil can well afford to spend a little time in verifying the foregoing statement, as his interest and success in the subsequent work will be in proportion as he realizes their force.

### Major and Minor Triads.

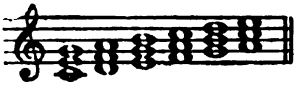
Triads are called *major* or *minor*, according as the *middle* tone is a major or minor third from the *root*. (The relation of the middle tone to the root is much more determinative of the general effect of the triad than is the relation of the middle to the upper tone, which is therefore left out of the account). As the major third is stronger than the minor, the *major triads* are stronger and more important than the *minor triads*. In this respect the three following

are more important than the four following:




PERFECT AND DIMINISHED TRIADS.

As regards the *fifth* in the triad, a *perfect fifth* is evidently stronger than a *diminished fifth*, and in this respect we have six strong triads —

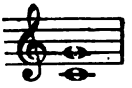


and one weak one —

(This last is doubly weak, in having a minor third, as well as diminished fifth).

Triads are strong and important, not only according to the strength of the *intervals* composing them, but also according to the strength of the *scale-tones involved* in them. The strongest and ruling tone of the whole scale is the keynote, which is also called THE TONIC.

The next strongest tone is the *fifth*. This is the dominating tone of the scale, next to the Tonic, and is characterized by the name DOMINANT.

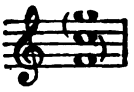


The Tonic and the Dominant are the *two foundation tones* of all music. It is the great importance of these tones which to a large degree causes the triads founded upon them to be *the most important in harmony*.

They are also otherwise strong in having a *major third* and a *perfect fifth*.

Reckoning *upward* a fifth from the Tonic (C) we reach the Dominant (G). Reckoning *downward* a fifth from the Tonic (C)

we reach F,

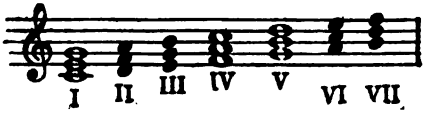


which we find to be the root of a *strong triad* (major third, perfect fifth), and having moreover the Tonic (C) as one of the elements of the triad.

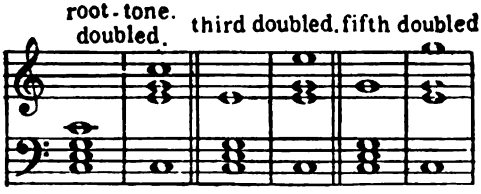
As being the foundation tone of so important a chord, rather than by virtue of its own distinctive quality, this fifth below (F) is called the SUBDOMINANT, i.e., the *under*-dominant, ruling, below the Tonic, somewhat as the Dominant rules *above*. According to the usual method of reckoning intervals *upward*, F will be spoken of as the *Fourth above C*, and the significance of the term *subdominant* is obscured. But from the foregoing the reason for the term is plain.

### PRIMARY AND SECONDARY TRIADS.

The triads of the scale are classified into *Primary* and *Secondary*, according to their importance. The primary triads are those of the Tonic, Dominant and Subdominant (which are also the *major* triads). The Secondary triads comprise all the remaining, i. e., on the 2d, 3rd, 6th and 7th degrees of the scale (which are also the *minor* triads).



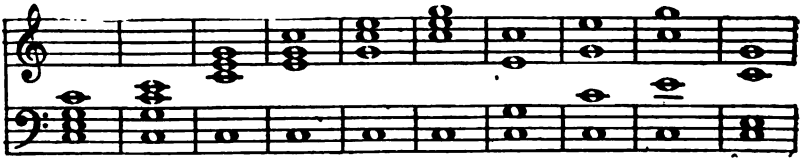

Our exercises will begin with the use of the Primary triads. But we must first speak of the *number* of *tones* or *parts* that constitute our fundamental chords. As the elementary triad consists of three distinct tones, it might be supposed that our elementary harmonies would be composed in three parts. But the number of parts is dependent upon other principles, which are more fully explained in the Appendix (B). It will then suffice here to say that fundamental harmonies are properly considered as being *four-toned*, or *four-voiced*. It is therefore evident that in the use of the most elementary combination, the triad, one of the tones must be *doubled*. We have our choice of doubling either the root-tone, the third, or the fifth, thus:



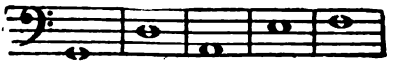
The only law to determine which it shall be is the law of effectiveness, and experience proves it to be the best in general to double the *root-tone.*

Constructing a four-toned harmony of the C triad we have

Variety in this chord, without any essential difference, can be secured by arranging the three upper tones of the harmony in different order. All possible combinations of this sort will still give *the same common chord of C, thus*:

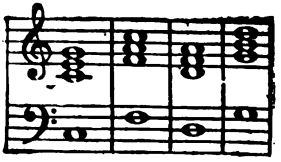


Such a difference as is indicated above is called a difference of *position.* The utility of such variety of position will be seen later. The above example illustrates what is possible in the case of every common chord. Let the pupil write a similar variety of position of the following chords:



### Chord-Connection.

The chords of C, F, D and G are each written *correctly* in the following:



but if played in succession, it is evident there is no proper connection between them, no natural *flow* of the harmony; and our object is, to learn not only the *correct formation* of each chord, but also their *proper connection* one with another.

For ease of expression, in referring to the several tones of a chord, we shall apply to them the same names as are used in vocal

harmony, viz: soprano, alto, tenor and bass. This does not, however, involve the necessity of considering the parts as performed by the *voice,* rather than by any other instrument. Of these parts the highest and lowest are called the *outer;* the others, the *inner* or *middle* voices.

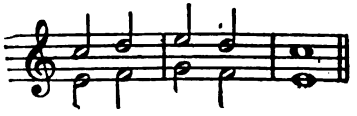
### Varieties of Motion.

Before giving the rules for the proper connection of chords we must speak of the different kinds of motion of the several parts or voices, *relatively to each other.*

There are three kinds of motion possible:

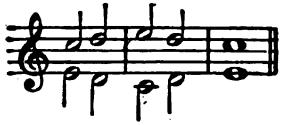
*Parallel,*

Voices moving in same direction simultaneously,



*Contrary,*

Voices moving in opposite direction simultaneously,



*Oblique,*

One voice stationary, another moving in either direction,

Of these sorts of motion, *contrary* is to be preferred. (For the explanation see Appendix (C) ). The two parts most conspicuous in their relation to each other are the *outer* parts; contrary motion is therefore to be sought in these parts, where it is not inconsistent with other requirements.

### Allowable Progression of Each Voice.

Our present harmonies and their progressions are the fundamental ones. Therefore the movement of each voice must be simple. *Effect,* in its usual sense, must be sacrificed to *simplicity.* In general the less movement the better, at least for the present. Although we are now dealing with the fundamental harmonies of *all* music, instrumental as well as vocal, the student will do well to be governed,

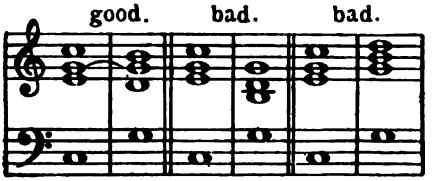
in his choice of progressions, by the thought of their being intended for the *voice*, inasmuch as the easiest vocal progressions are identical with the most natural and simple progressions in music universally. The easiest intervals for the voice are the *second* (major and minor) the *third* (major and minor) the *perfect fourth*, the *perfect fifth*, the *sixth* (major and minor) and the *octave*.

Any interval larger than a perfect fifth will rarely be used in the present work. The augmented intervals (i.e. augmented second, augmented fourth and augmented fifth), are to be *invariably* avoided.

In general, it is the smaller and the natural intervals of the scale that are to be used.

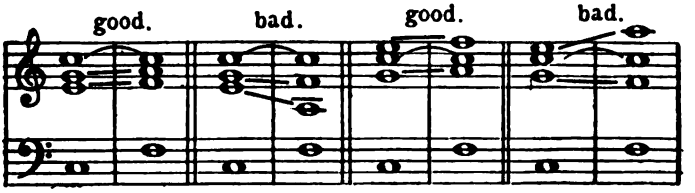
### Three Primary Rules of Chord-connection.

1st. *If there be any tone in common in successive chords, retain it in the same voice.*

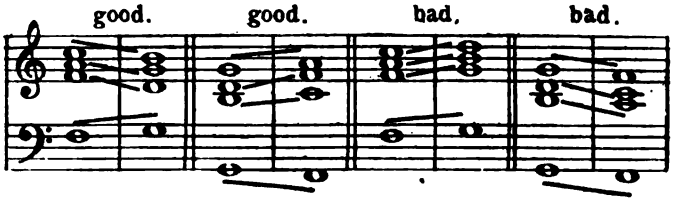



The violation of this rule leads to unnecessary motion of the voices, and a less smooth and flowing progression, as will be seen above.

2nd. *Let the moving voices proceed to the nearest tones in the next harmony.*




3rd. *If there be no tone in common in the two chords, let the three upper voices move to the nearest tones in contrary motion to the bass.*



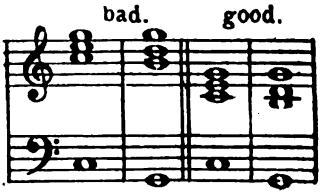

Not only is contrary motion in itself better than parallel, but it prevents faulty relations between individual voices, which will be noticed later.

In the above illustrations some are marked "good," others, "bad." In these and *all future illustrations* of this sort, the pupil should *play* the examples, and explain why they are so designated. As a rule pupils pay very little attention to the illustrations. The teacher will do well to enforce this requirement.

### The Primary Common Chords.

The following exercises consist of the various combinations of the *Primary Common Chords* in different scales, according to the three rules above given. *Each exercise is to be written three times,* first with the octave of the bass, then with the third, and lastly with the fifth of the chord in soprano in the first chord, the other voices taking the tones of the chord lying nearest the soprano. Care should be taken that the voices do not lie too high on the soprano clef (a common fault with beginners), and never let the soprano be higher than G above the staff.

When the bass is low, let the other parts be somewhat lower also; thus the following, though correctly harmonized, has an unmusical effect, owing to the great distance between upper parts and bass.

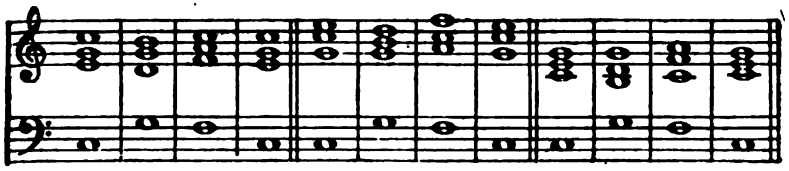



For the success of the pupil in the following and all future exercises, it must be reiterated that it is not sufficient that the chord be correctly written on the staff, but the *sense of the effect must accompany the writing.* If it cannot be done otherwise, play the exercise

through, and then *read* it and *recall* the effect. By perseverance in this matter, the ability of the student will increase as rapidly as the combinations become more difficult. *To write an exercise without the sense of the effect is simply senseless.*

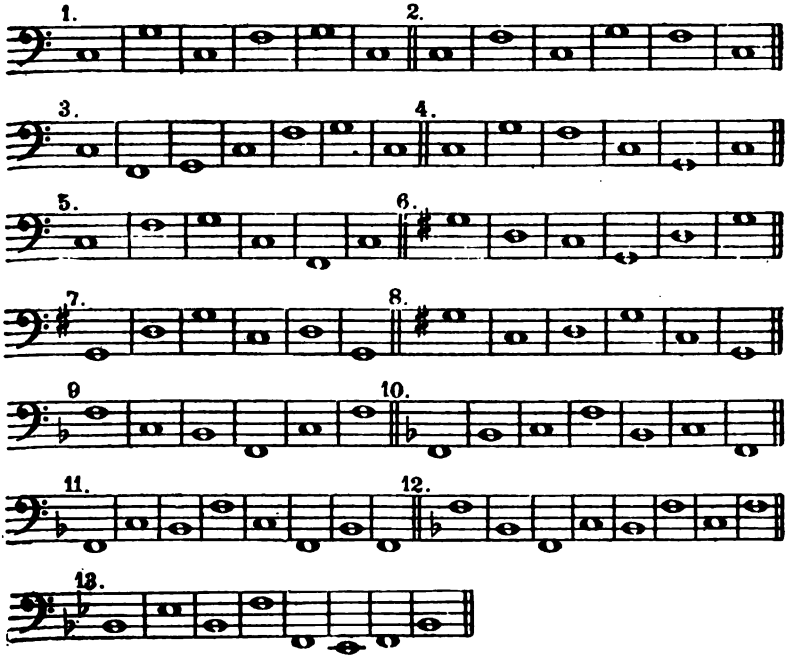
(Each set of exercises will be prefaced by an illustration, showing the use of the chords involved.)

ILLUSTRATION.



All the exercises should be written *according to the laws of notation, neatly, and distinctly.*

EXERCISES.




The above exercises are monotonous because they involve only three distinct chords. But facility in these primary progressions makes all others easier.

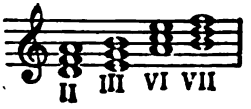
SUMMARY.

Distinction of *independent* and *dependent* chords;—Formation of the Common Triad;—The *root* of the triad;—Reason for similarity of effect in all common triads:—Two causes of variety in effect of triads;—*Major* and *minor, perfect* and *diminished* triads:—*Tonic, dominant* and *sub-dominant*:—Why triads on these three tones are strongest and most important:—*Primary* and *Secondary triads*:—Fundamental harmonies *four-toned*:—The best tone of triad to be doubled:—*Position* of a chord:—Names applied to the several tones of a chord:—*Parallel, contrary* and *oblique* motion:—Which preferable:—Which voices most conspicuous:—*Best interval-progressions* of each voice or part:—The forbidden interval-progressions:—*Three Primary Rules* for chord-connection.

## CHAPTER II.

### THE SECONDARY COMMON CHORDS.

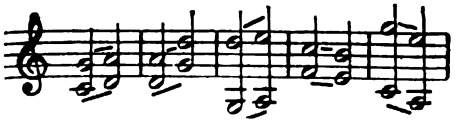
The Secondary triads of the C-scale are these:



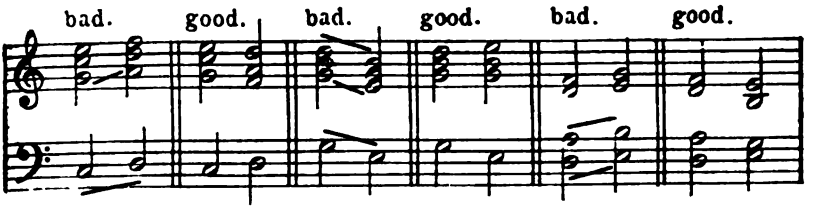

The four-toned harmonies obtained from these triads (by doubling the root-tone) are to be used in the same manner as the Primary Common Chord. Although these Secondaries are not as important as the Primaries they are all effective (except the one on the 7th of the scale, with a *diminished fifth;* this will be spoken of later). In the use of these Secondaries we are governed mainly by the Primary Rules of connection before given (on page 20). By following those rules the *aggregate* effect of the four tones of each chord will be good, although the effect of any two out of the four, *considered by themselves,* will often be more or less inharmonious. Any such displeasing effect is usually compensated for by the harmony of the full chord; accordingly the movement of any two of the voices in their relation to each other need not ordinarily be regarded; but there are two exceptions, viz:

*No two voices can ever move in parallel perfect fifths and octaves.*

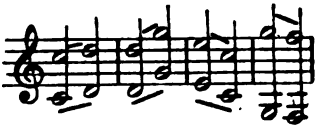
*Parallel perfect fifths* occur when any two voices, at an interval of a perfect fifth, moving in the same direction, maintain the same interval of a *perfect fifth* from each other, thus:



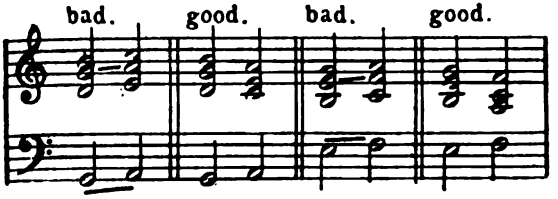
They appear in the following four-part harmonies.




*Parallel octaves* similarly occur when any two voices, at an interval of an octave, and moving in the same direction, maintain that same interval from each other, thus:



They appear in the following harmonies:

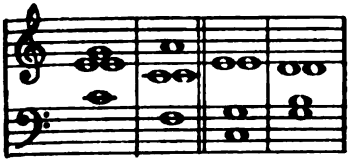



It will be seen from the above example that contrary motion is an invariable preventive of these forbidden progressions. While they are not likely to occur in the use of our present chords, when the three Primary Rules are followed, there will be danger of their occurrence when the harmonies are more complicated. The effect of *parallel perfect fifths* or *octaves* is *always* more or less bad, and the foregoing prohibition is the *one invariable rule* in fundamental harmony.

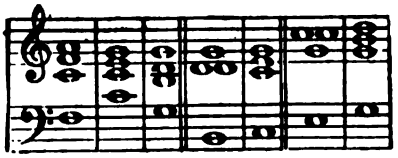
A word as to the reason for the prohibition.

*Parallel octaves* are not allowed because, to obtain the largest effect in the succession of fundamental harmonies, we must have the greatest possible *distinctiveness* of the parts. This distinctiveness is attainable in three ways; viz., by distinctiveness of *tone*, of *direction*, and of *rhythm* (See Appendix (C) ). The *octave* of any tone may be called *its higher self*. Therefore if two parts move in octaves, the individuality of one of them, as regards both *tone, direction* and *rhythm*, is lost in that of the other, and the chords become, for the time being, essentially *three-part* harmony. For the same

reason is it even less allowable for any two parts to be *in unison* in two successive chords; thus,



Circumstances will sometimes justify a unison of two parts in a *single* chord, thus:



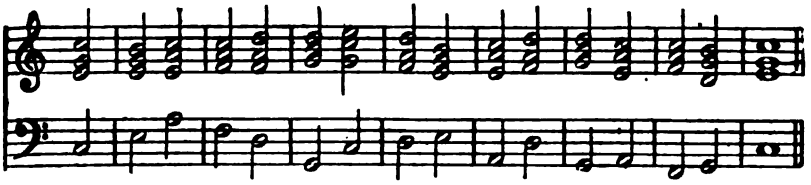
(This will be spoken of again later.)

The prohibition of *parallel fifths* is much harder to explain. Their uniformly bad effect has always been felt by writers upon Harmony, yet no one has succeeded in giving a simple and lucid explanation of the matter. The best that can be offered will certainly be somewhat abstruse, and not being practically necessary the pupil will find it stated in the Appendix (D). It will suffice to say here that they are forbidden from the simple fact of their unpleasant effect, which is never entirely concealed by the addition of the remaining tones of the chords. The universality of the prohibition of either *parallel fifths* or *parallel octaves* is not because their effect is so much worse than that of many other progressions; but because *in every instance,* a certain degree of positively bad effect is evident. The movement of two voices, at other intervals from each other, is often much more objectionable than parallel fifths or octaves.

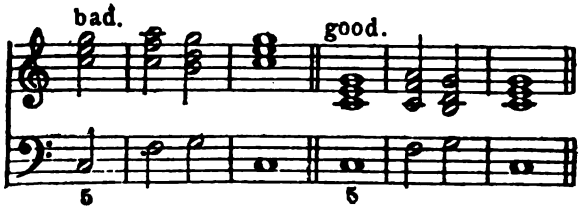
But *in respect of all other movements,* circumstances so far alter cases, that a movement that is bad in one circumstance is good in another; whereas *parallel fifths* and *octaves* are *never* so modified by circumstances as to produce a good effect.

Let the following exercises, involving the primary and secondary common chords. be written with a strict observance of the Three Primary Rules.

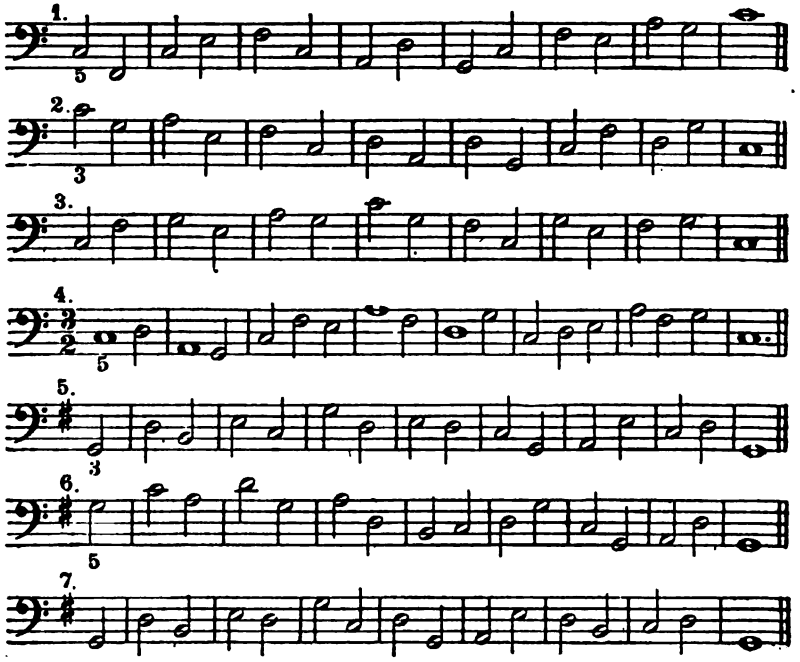
ILLUSTRATION.

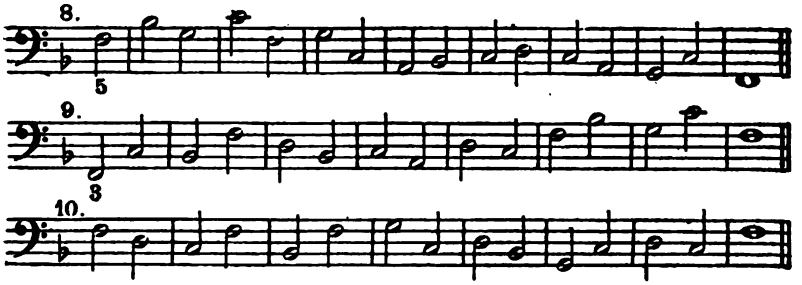


A better flow of harmony is often obtained by placing the *third* or *fifth* of the first chord in the soprano, instead of the octave of the root. If the soprano is to be the *third* or *fifth*, it is indicated by a 3 or 5 *placed under the first bass note.* Otherwise let the soprano be in octave with the bass. *This rule must always be carefully observed.* Use judgment also as to which third or fifth shall be chosen. The following shows the difference between a poor and a good choice.



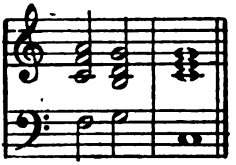

EXERCISES.



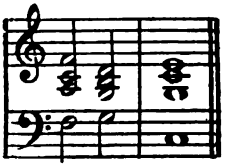



THE CLOSING CHORD OF EVERY COMPOSITION.

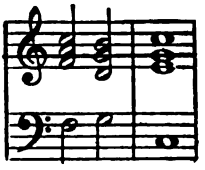
Every composition closes with the *Tonic chord,* because this alone, of all the seven chords of the scale, has the nature of complete rest. This *terminal* effect of the Tonic chord varies somewhat according to the element of the chord that is in the soprano (octave, third, or fifth from the root), being weakest when the fifth is in soprano:



stronger with the third in soprano:



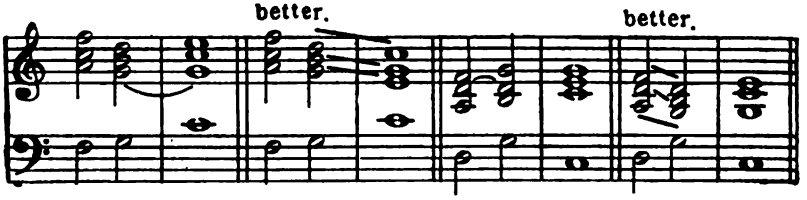
and strongest with soprano on the Tonic:



(The pupil should carefully compare the three effects of the Tonic chord in these three positions, and also examine the closing chord of various vocal and instrumental compositions, where he will find that the vast majority close with the Tonic in the highest part, that with comparative infrequency the *third,* and very rarely the *fifth,* occurs in the highest part.

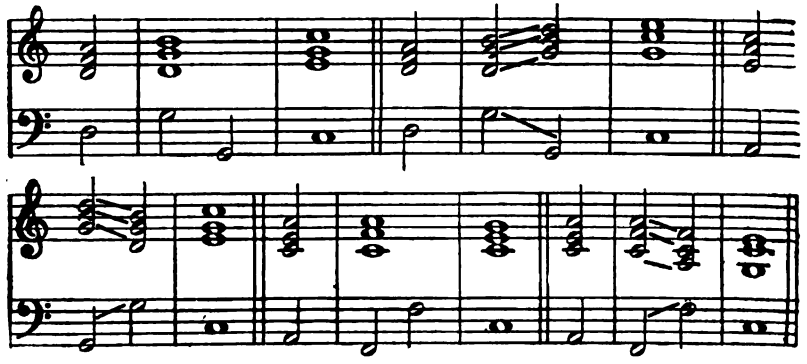
This matter of the *close* is discussed more fully in a later chapter under the subject of *Cadence*).

It is better sometimes to violate the Primary Rule of retaining in the same voice the tone common to two chords, when thereby the final chord of an exercise can be brought into a more effective position for the close, thus:

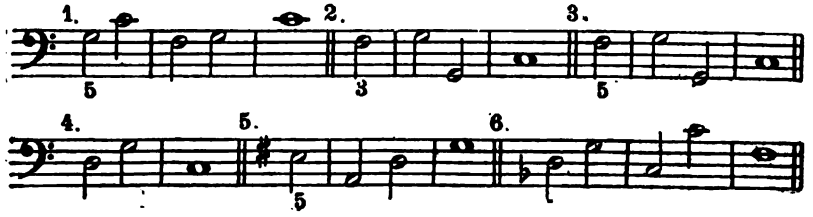



*In any other part of the exercise,* the Primary Rule should be followed, in such cases as the above, so as to avoid the effect of a close.

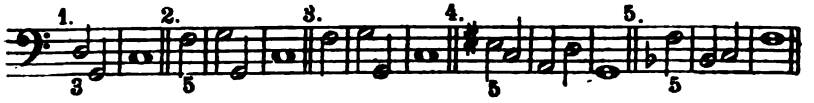
When a bass note is repeated in the same measure an octave above or below, the harmony can either be written in *whole* notes, or, which is often better, a different *position* can be chosen. In the latter case it is usually preferable that the upper voices should move in contrary motion to the bass, although parallel motion is allowed.



In the following brief exercises, which we will regard as *closing fragments,* bring the soprano upon the *keynote* in the final chord.



In the following, bring the soprano upon the *third* in the final chord.



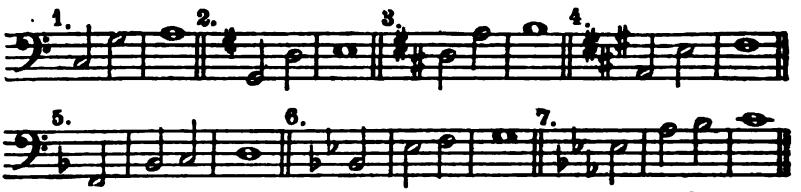

## THE LEADING TONE.

A close examination of the tones of the diatonic scale discloses the fact that they differ from each other in their natural tendency as regards *movement*. Some of them are, as it were, equally poised, and the remainder have a more or less pronounced tendency *downward* or *upward*. In the Appendix (E) the scale is more completely analysed in this respect. For the present we have to do with the tendency of only *one* tone in the scale, the *seventh*. By carefully noticing the quality of this tone, it will be found to lead very evidently up to the *eighth*, the Tonic, and is generally denominated "the leading tone." It is a mistake to suppose this to be the only tone that has the *leading* quality; but it is so pre-eminent in this above all the others that it is rightly called "the leading tone". The stiffness and unnaturalness of many a pupil's exercises is in a measure due to a disregard of this natural leading of the *seventh;* and this gives occasion for insisting again upon the necessity of knowing the effect of each chord, ***which is so often the only guide in choosing a good progression.***

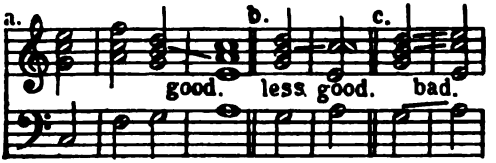
When a chord, *containing the leading tone in the soprano,* is followed by one *containing the Tonic,* it is generally better for the soprano to move to the Tonic, thus:


Example (b) is in strict accordance with the third Primary Rule, but the progression at (a) is better, because more natural. This exception to the rule occurs when the common chord on the Dominant (with the leading tone in soprano) is followed by the common chord on the *sixth* of the scale, as in the example above.

Let the pupil harmonize the following fragments according to the foregoing exception.




When the *leading tone* occurs in an *inner* voice, in the above succession of chords, it is not necessary to follow its natural progression, not because the inner voice does not feel the impulse upward as strongly as the soprano, but because, being an inner voice, it is less conspicuous to the hearer, and the downward motion will secure fuller harmony, thus:




At (b) we have only three-part harmony, at (c) four-part harmony, but parallel fifths between soprano and bass.

The object of the following exercise is, to impress *the leading tone* upon the pupil's mind. Wherever the dominant chord (with "leading tone" in soprano) is followed by the chord on the *sixth* of the scale, let the progression from *leading tone* be upward; the other voices downward as usual; but in the same succession of chords, with *leading tone* in a *middle* voice, let the progression be *downward*.

In that position of the chord wherein the leading tone occurs in the tenor, it is sometimes more judicious to lead up into unison with the alto, even at the expense of losing one tone of the harmony. For although the tenor is an "inner voice", its progression is in general more conspicuous than that of the alto. Accordingly the progression at (a) is somewhat preferable to that at (b).

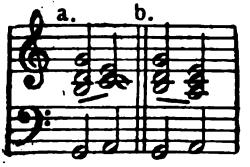
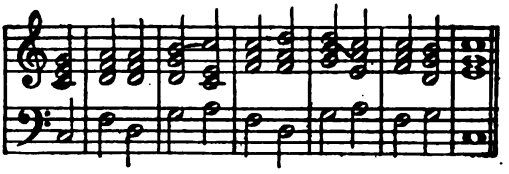
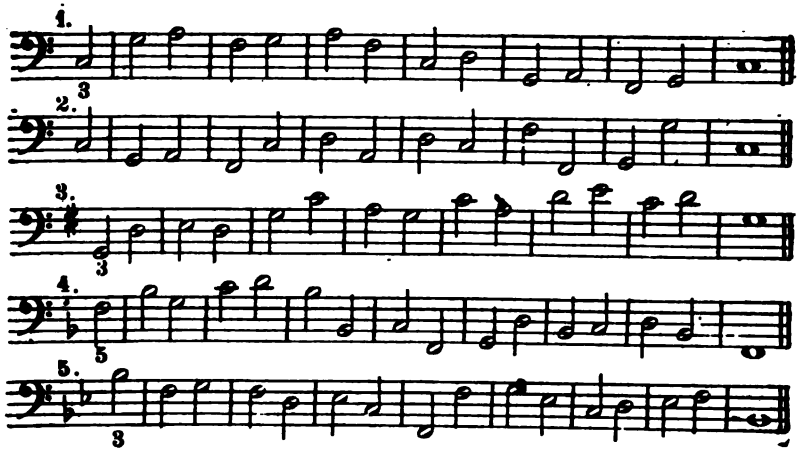


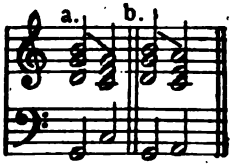

ILLUSTRATION.



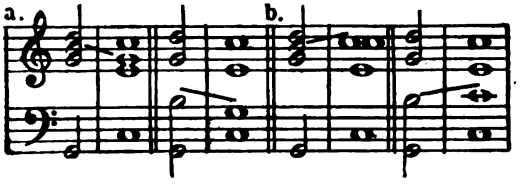
EXERCISES.




The movement of the soprano in the following example, from the *leading tone* to G (a), is still more unnatural and offensive than its movement to A (b).

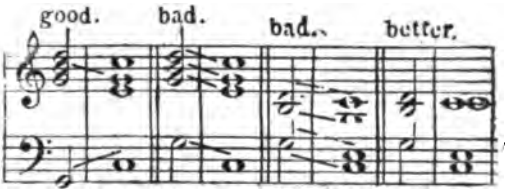



The foregoing progression at (a) which is utterly inadmissible in the soprano, is to be allowed in an inner voice, because less apparent, and is very often desirable, as affording a fuller harmony.




This progression (a) is especially desirable at the close of an exercise, in order to have the final chord in full harmony, with soprano on the Tonic.

The above descent from the leading tone, when in the middle voice, is to be avoided when the bass also descends, for in this case *all* the voices descend, thus:

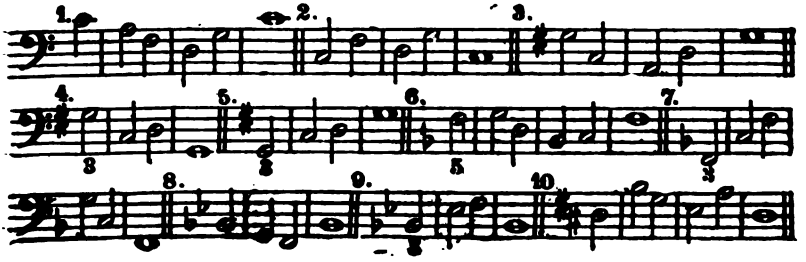



From the foregoing we deduce the following rule; in the progression from the dominant to the tonic chord, the leading tone can descend a third, when in an inner voice, if the bass ascends; otherwise it must ascend.*

The following closing fragments are designed to accustom the pupil to this manner of treating the leading tone.

ILLUSTRATION.

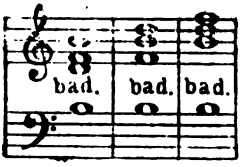
EXERCISES.



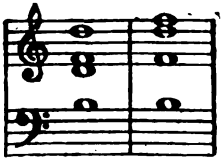

THE DIMINISHED TRIAD.

The triad on the seventh of the scale is different from all the others in having a diminished fifth. In doubling the root-tone for four-part harmony the soprano can take either the *octave, third* or *fifth.*

*Although this is the usual rule prescribed in text books, the great harmonist Sebastian Bach, is authority, in some of his chorals, for leading *all* the voices down.



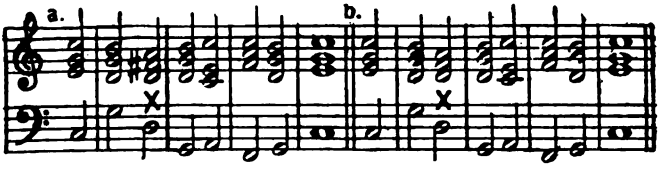

By doubling the root-tone we have *two leading tones,* so that neither of the above chords is satisfactory. The best of the three is the one with soprano in the third, for this somewhat conceals the octave of the bass, which is in the alto. By doubling the *third* or the *fifth* we better ourselves somewhat.



But almost any connection of either of these forms with the other common chords is awkward and displeasing. In whatever connection and in whatever form this chord appears, it bears the stamp of the *diminished fifth,* which usually prevents its adoption in simple harmonic progressions. The occasional opportunity for its use will be shown later.

### The Incidental Alteration of the Common Chord.

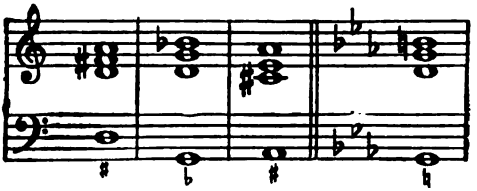
Hitherto we have used only the natural tones of the scale in forming the chords. While the integrity of the scale and the clearness of the harmony require that in the main the chords should be thus composed, monotony would inevitably ensue if this rule were invariable. The occasional substitution of an accidental tone for a normal tone does violence neither to the scale nor to the harmony, and casts an agreeably new complexion upon the flow of harmonies. Compare the following:




and the third chord will be found more pleasing with the F# than with the normal tone on that degree of the scale. The pupil is not to confound this with modulation; such a use of accidentals is not modulation, as will be explained later.

The subject of Modulation is fully discussed in Chapters XVIII-XIX.

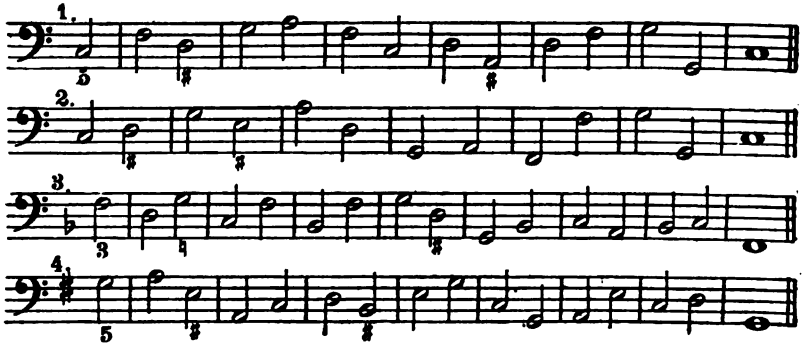
Accidentals thus used commonly affect the *third* in the chord, very rarely the *fifth*, and when one is placed under a bass-note it is to be understood as belonging to the *third* from the bass, thus:



The use of accidentals to affect the *third* is commonly to change a *minor* third to a major.

The following exercises give practice in the use of accidentals. The above example will suffice as an illustration.

EXERCISES.




SUMMARY.

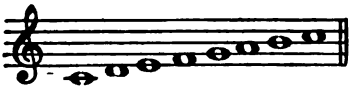
Secondary triads:—Parallel perfect fifths and octaves:—The way to avoid them:—Reason for bad effect of parallel octaves:—Distinctiveness of parts is three-fold:—Successive unisons:—Reason for the invariable prohibition of only parallel perfect fifths and octaves, if they do not produce the worst effect of all progressions:—Relative value of octave, third and fifth in soprano in last chord:—Relaxing Primary Rule, to bring soprano on the Tonic in last chord:—Procedure when bass moves an octave:—Leading tone:—Exception to third Primary Rule:—Movement from "leading tone" when in an "inner" voice:—proper progression from "leading tone" in different voices, when dominant chord is followed by that of the Tonic—Diminished triad, and doubling its root in four part harmony:—Use of accidentals:—Which element of chord usually affected by them:—Accidentals used to change a minor third to a major.

## CHAPTER III.

### The Minor Scale and its Triads.

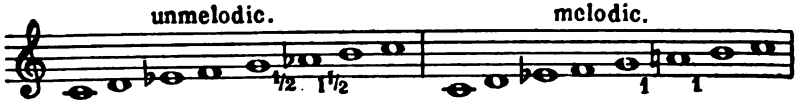
The scale heretofore used has been the Diatonic Major Scale. As already remarked, the several tones of this scale constitute a sort of organism, by reason of the internal relation of the tones to each other. But there is still another series of tones which shows itself to be equally an organism, with corresponding relation of the several tones among themselves, and equally melodic, yet with a surprisingly different effect, from the simple fact that the intervals of tones and semitones succeed each other in different order.

The Diatonic Major scale of C

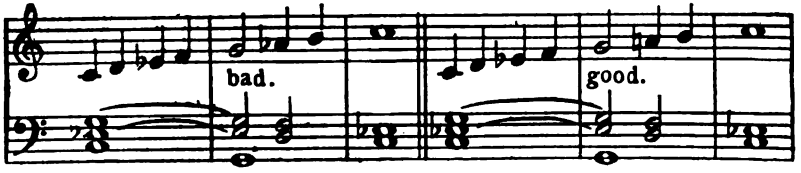


is a sample of the scale thus far used in our work. This can be transformed into another scale, equally coherent, by changing the *major third* above the Tonic into a *minor third,* and the *major sixth* into a *minor sixth,* thus:

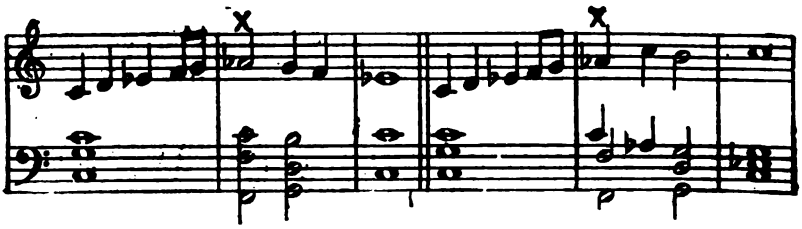
This is not so melodic throughout as the preceding scale, on account of the gap between A♭ and B. To avoid this interval of an *augmented second,* the melody, when proceeding by degrees upward from G, takes A, which divides the space between G and B into two equal intervals, thus:



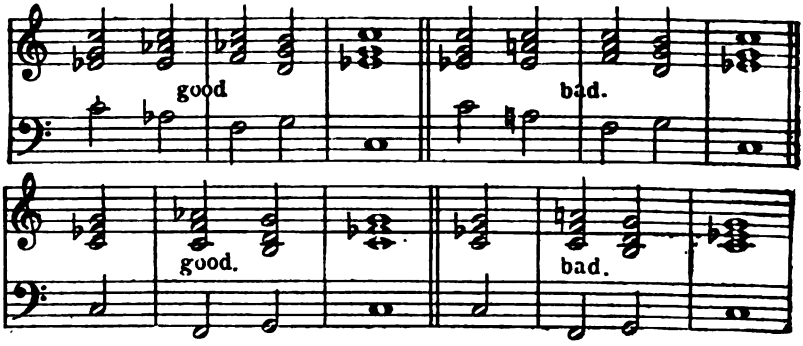

In connection with harmony it appears as follows:



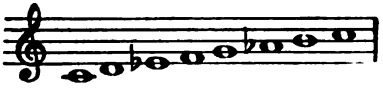

But even as the melodic tone the A♮ is not invariably used, for if the 6th degree of the scale is not followed immediately by the 7th, then the 6th degree will be A♭, thus.



We may then regard A♭ as the *normal* tone of this scale, and A♮ as the occasional substitute, for the sake of a smoother melody. But as the *harmonic* tone, i.e., as the root or any element of the chord, the 6th degree must always be A♭, thus:

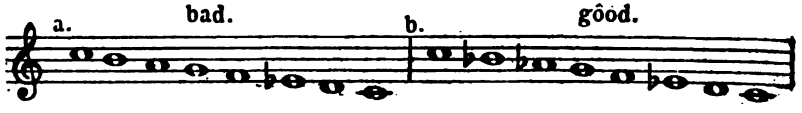



This form of the scale

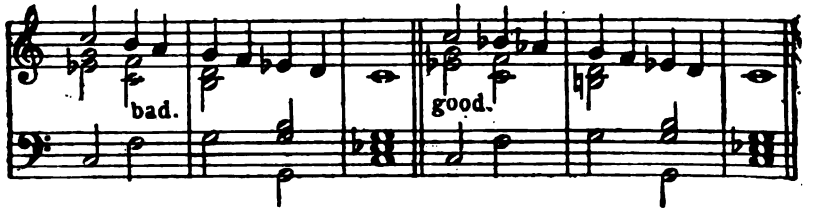


is accordingly called the *harmonic* form, and the following,

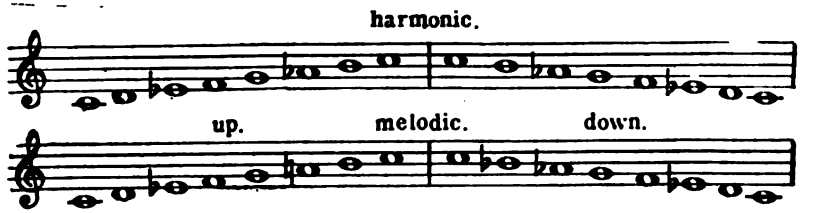
the *melodic* form. But while the ear is satisfied with the above, as an *upward* melodic scale, the effect, in reverse direction, is quite incongruous:




We must therefore have an altered form for the descending scale, which is found above at (b). The necessity of this form is shown more clearly by combining each of the above forms with harmony:




We thus have three different forms in our new scale; the *harmonic* (alike up and down), the *melodic upward*, and the *melodic downward*.




This new scale, in its collective forms, is called

THE DIATONIC MINOR SCALE.

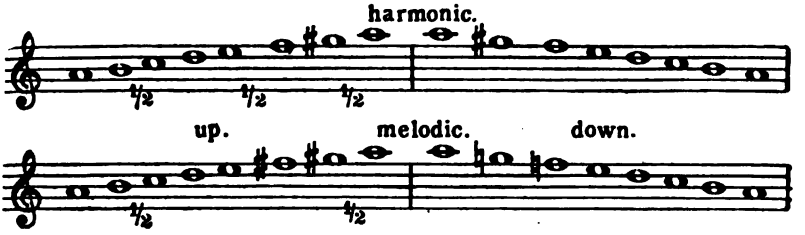
It is so called because we obtained it by changing the *major third* and *major sixth* of our previous scale into *minor third* and *minor sixth*. (Similarly the previous scale takes its name of *major* from its *major third* and *major sixth*.)

On comparing the major and minor diatonic scales, we are at once impressed with the distinctive character of each. In the German language, which is so apt in the significance of its terms, the major is called *hard* (Dur), the minor, soft (Moll). The major is vigorous and manly; the minor feminine and tender; the one, strong; the other, weak. Moreover the minor scale is proverbially sad, and cannot be joyous. While Milton's L'Allegro is emphatically major, Il Penseroso is equally minor; and yet Handel's "Dead March in Saul" is striking evidence of the capacity of the major scale to express the deepest sadness, for this composition is thoroughly major, containing not even a single minor chord. The tonic and dominant chords comprise the bulk of its contents. The major scale is thus more versatile than the minor in the diversity of its power. But there is a sort of self-possession, a dimly defined hope, in the sorrow of a major composition. The mood of the minor scale is the sadness of despair.

Again, looking at these two scales from another point of view, we see that the major is characterized by simplicity; it is invariable, up and down. The minor is complicated, having three forms. This increases the difficulty in its correct use, but at the same time stamps

this scale as being richer in its contents than the major, as there are two more tones involved in it.

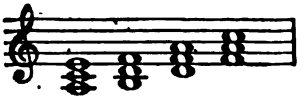
If instead of beginning the minor scale upon C we begin it upon A, and have the successive intervals exactly correspondant with those in the minor scale of C, in the several forms, we obtain the following harmonic and melodic scales of A minor.




In the *harmonic* scale the semitones occur between the 2d and 3rd, the 5th and 6th, and the 7th and 8th. In the *melodic, up,* between the 2d and 3rd, and 7th and 8th. In the *melodic, down,* between the 2d and 3rd, and 5th and 6th.

As to the reason for having two forms of the melodic scale, see Appendix (F).

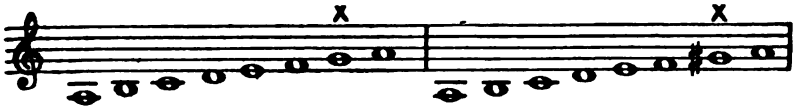
It will be seen that the scales of C major and of A minor are closely linked together; for in beginning the minor scale upon A we find our *minor third* and *minor sixth* already prepared to hand. The *harmonic* form therefore requires only the substitution of G# for G; the *upward melodic,* the use of F# and G#, while the *downward melodic* scale comprises the identical tones of the major scale throughout. This degree of identity of the tones, and the consequent identity of form of the triads on A, B, D, and F,



which make the passage from the one scale to the other very easy, cause them to be called *relative* scales; that is, the *relative minor* of C major is A minor, and the relative major of A minor is C major. Similarly, the relative minor of any major scale begins a *minor third below,* and conversely, the relative major of any minor scale begins a *minor third above.* Furthermore the great degree of identity of tones of a minor scale with those of its relative major causes that *the signature of a minor scale is the same as that of its relative major.*

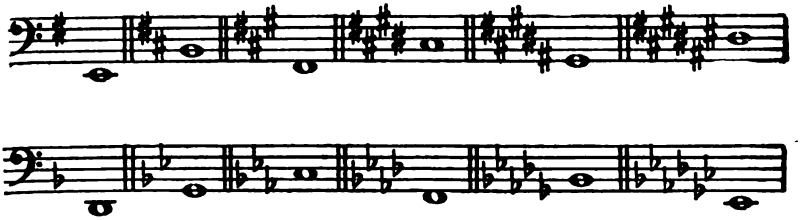
The necessity of a semitone between the 7th and 8th of the scale is the requirement of the leading-tone-quality in the 7th, which is

as essential to the minor as to the major scale. Compare the following:

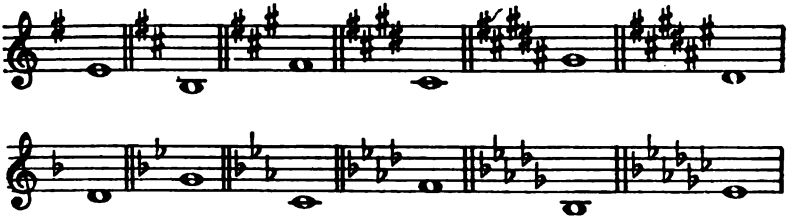


If the 7th were to be invariably raised, the accidental could be put into the signature; but as we have seen, the accidental is omitted in the downward melodic scale, so that the simplest way is that it be always expressed when needed.

The first great difficulty in the study of Harmony is in the use of the minor scale. For this reason a full and explicit statement of its construction has been given. To insure a reasonable degree of familarity with its complexities, it is now required of the pupil that, according to the model furnished above in the scale of A minor, he should write all the following minor scales in the harmonic and melodic forms, in the several signatures.



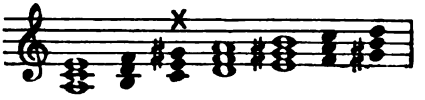
Write the same in the bass clef:



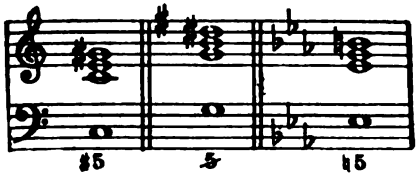
The purpose of the above exercise will be fully attained only when the *effect of each form* becomes *fixed in the mind.* The pupil can well afford to spend the time necessary for the complete mastery of this scale; for without it, he will be constantly liable to embarrassment and consequent inaccuracy in its use.

### The Triads of the Minor Scale.

The triads of the scale of A minor are as follows:

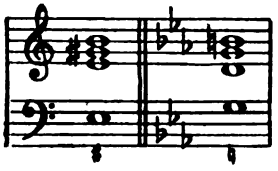


Those on the *first, fifth and fourth* of the scale are the Tonic, Dominant, and Subdominant triads, as in the major scale. But only one of them, the Dominant, is a major triad. In addition to major, minor and diminished triads, we here meet with a new form, founded on the third of the scale (C), containing an augmented fifth by reason of the raised 7th (G#). This triad is called the *augmented triad.* As the 7th of the scale is not invariably raised, the accidental must be indicated when wanted. In the augmented triad it is indicated by prefixing it to the figure 5, placed under the bass note, as that is the interval from the bass.



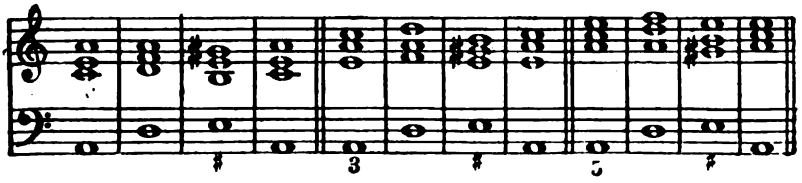
A line through a figure is equivalent to a # before the figure, thus 5̸=#5.

The dominant chord of the minor scale contains the raised 7th as the third of the chord, and, as already explained, the simple accidental, without a figure, is placed under the bass note:

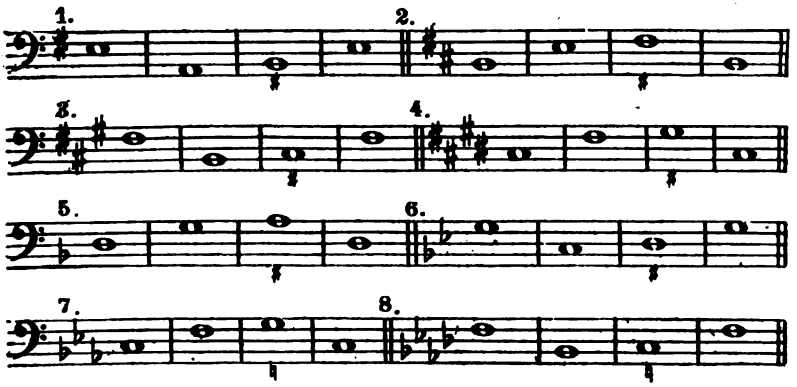


In writing the following exercises, place first the *octave,* then the *third,* and lastly the *fifth* in the soprano of the first chord.

ILLUSTRATION.

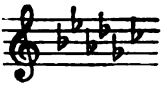


EXERCISES.



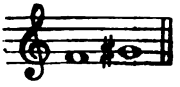

As the *raised 7th* is such a significant tone of the minor scale, in order to impress it upon the mind, let the pupil write out, for himself, the dominant chord with the necessary accidental in each signature up to

and

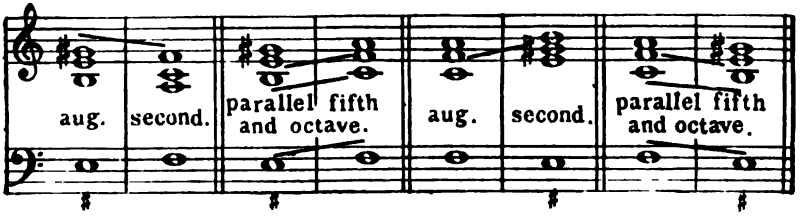


THE AUGMENTED SECOND.

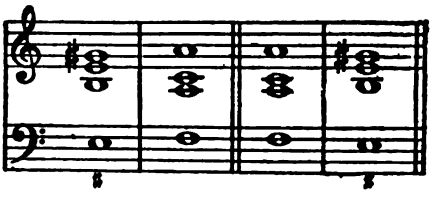
The chief difficulty in the use of the minor scale arises from the interval of an *augmented second* between the 6th and 7th of the scale,

in A minor, 

which is a prohibited interval in all fundamental progression, owing to its difficulty and unnaturalness. The voices must therefore be so disposed that none will be obliged to take this interval. The difficulty occurs chiefly in the connection of the chords on the 5th and 6th of the scale, thus:

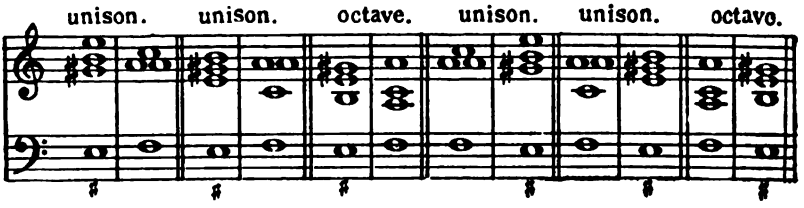


The above faults are avoided by the following progression:



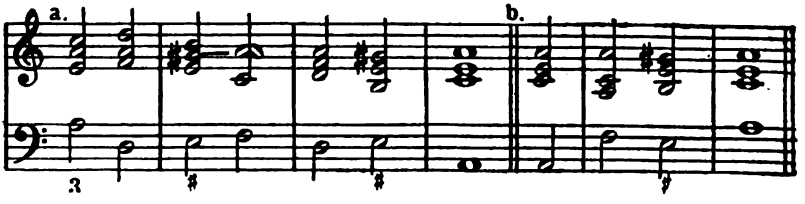
This is the *only progression possible* in the combination of these two chords. In such combination *neither the root nor the fifth* in the chord on the 6th of the scale can be doubled. The procedure in the connection of these two chords is expressed in the following law:

*We must invariably double the third in the chord on the 6th of the minor scale, when that chord is preceded or followed by the dominant chord.* This doubling can be either in *unison* or in *octave*, thus:



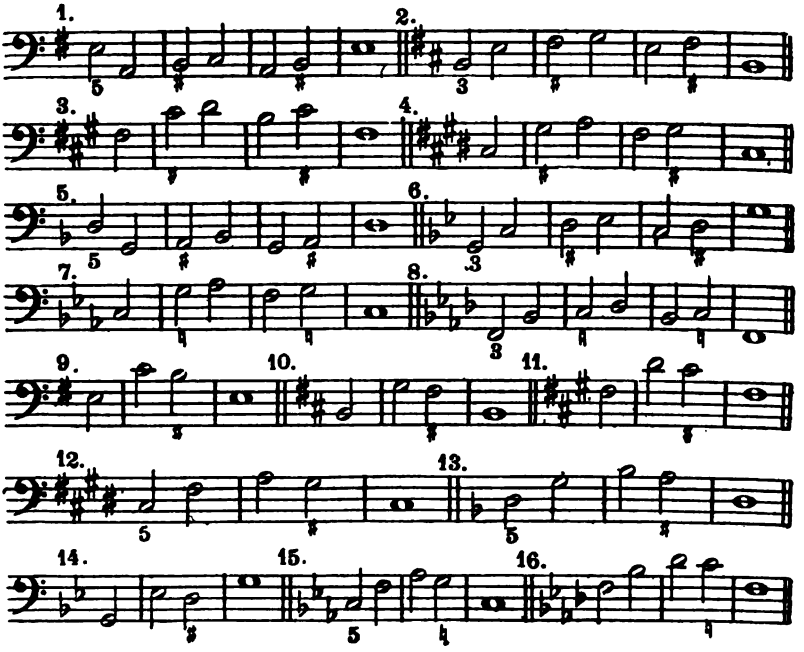

The difficulty in the connection of these two chords, and the *single solution* of the difficulty, must be clearly understood, as the frequent embarrassment in the writing of exercises in the minor scale will be found to center *in this very point.* The following exercises will give facility in the combination of these chords.

ILLUSTRATION.

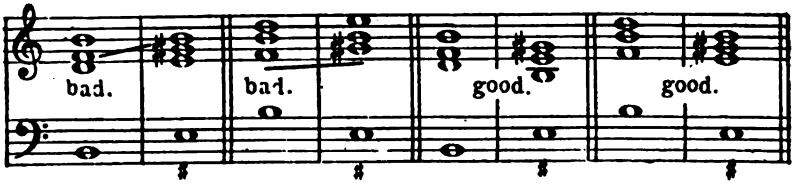



Let attention always be given to the *position of the first* chord of each exercise, as indicated by the figuring. Carelessness in this respect is certainly inexcusable.

EXERCISES.

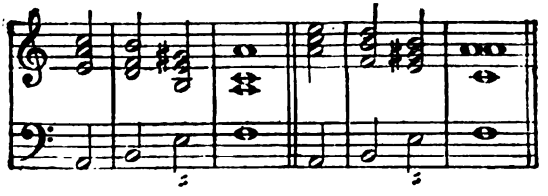



In the connection of the chords on the 2nd and 5th of the minor scale, the rule of retaining in the same voice the tone in common must be violated in order to avoid the progression of an augmented second, thus:

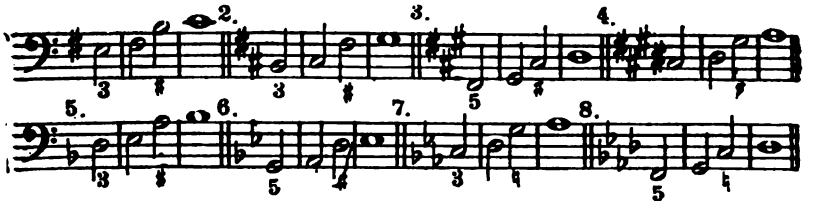



As seen above, the only way to avoid the fault is to have all the upper voices descend, even though the bass descend. The following fragments introduce this difficulty, and also the preceding, in different scales.

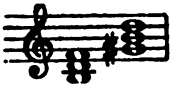
ILLUSTRATION.



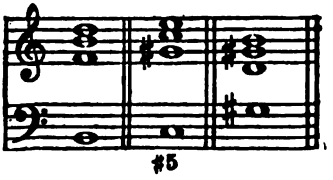
EXERCISES.




There are two diminished triads in the minor scale, on the 2nd and on the 7th degrees,

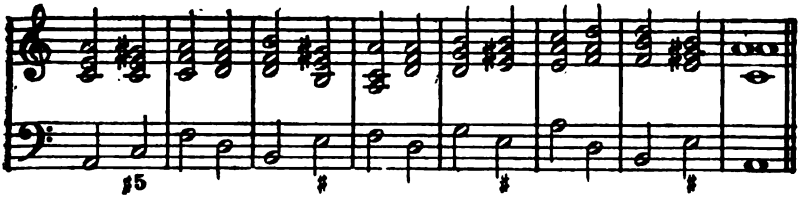
in A minor 

instead of only one, as in the major scale. The resources of the minor scale are not to be judged by the use of the simple chords thus far presented, for after deducting the three chords, on the 2nd, 3rd and 7th of the scale,

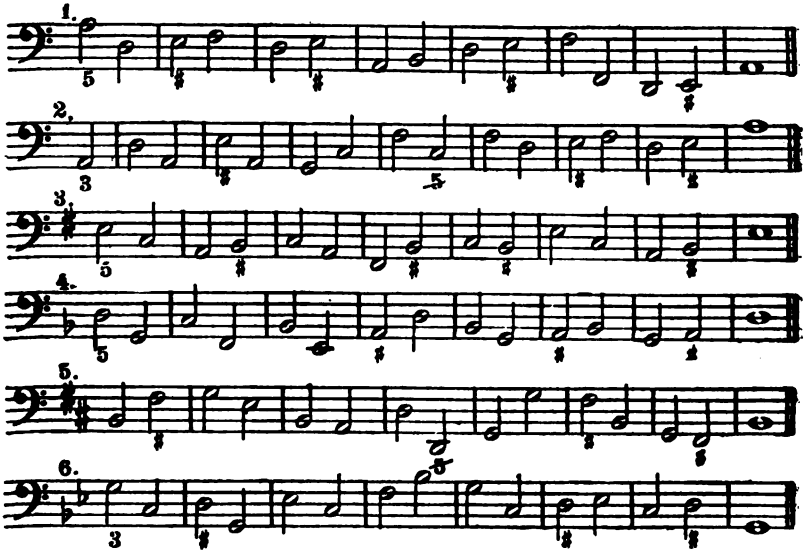
in A minor 

which are less effective because of the *diminished fifth* in two of them, and the *augmented fifth* in the third, we have only four remaining. But it will be none the less advantageous for the pupil to work out the following exercises, with a strict observance of all the foregoing rules. As a precaution, look through each bass, before writing the harmony, to see if the 5th and 6th of the scale are in immediate connection, so as to double the *third* in the chord on the 6th.

ILLUSTRATION.



EXERCISES.



SUMMARY.

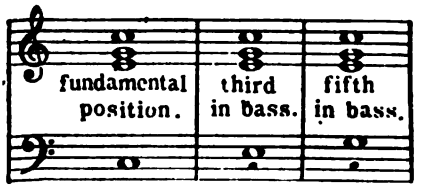
How the major scale is transformed to the minor:—Why the minor is less melodic than the major:—How the minor scale is made melodic:—The three forms of the minor scale:—Points of contrast in the major and minor scales:—Why the A minor scale is called the "relative minor" of C major:—Interval between keynotes of every major scale and its relative minor:—Signature of every minor scale:—Why the accidental that produces the "leading tone" in the minor scale is not expressed in its signature:—Classification of triads in minor scale:—How the raised *fifth* in the augmented triad is indicated:—How the alteration of the *third* in a chord is indicated:—Chief difficulty in use of minor scale:—Why augmented second is prohibited:—In the connection of what chords the augmented second is most likely to occur:—In such connection what law to be followed:—Rule in the connection of chords on the 2nd and 5th of the scale.

## CHAPTER IV.

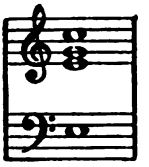
### THE INVERSIONS OF THE COMMON CHORD.

Hitherto we have used our chords with *the root of each in the bass*. This is the most simple and obvious arrangement of the tones, and chords in this form are said to be *in the fundamental position*. But we can form a re-arrangement of the tones (for example, in the chord of C), wherein *not the root but the third* is in the bass; and

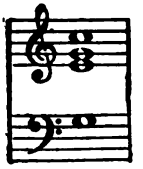
still again, a second re-arrangement wherein *the fifth* is in the bass, thus:




The fundamental form and the two re-arrangements are still *radically* the same; that is, they all have the same *root*, C: but with this radical resemblance, they yet produce quite different effects from each other. These re-arrangements of the chord are called its inversions. That in which the third is in the bass



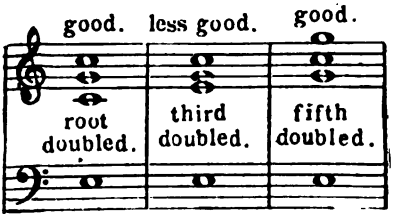
is called *the first inversion,* that with the *fifth* in the bass is called *the second inversion.*



The use of these derived chords affords great variety in the employment of the common chords. Each inversion will be examined separately.

### The First Inversion.

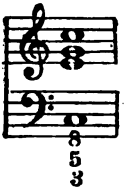
In this chord, as in the fundamental form, to obtain four-part harmony, we must double either the *root, third* or *fifth* of the triad, thus:



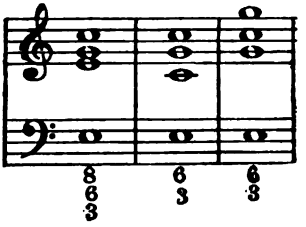

By a comparison of these several forms, and still more by extended experience, it will be found *most satisfactory to double either*

*the root or the fifth,* and (except under certain circumstances) least desirable to double the third, i. e., *the bass.*

An explanation must now be given of the figures hereafter to be found under bass notes. The *full figuring* of a chord is the set of figures placed under a bass note, indicating the intervals of the several notes from the bass. Thus the full figuring of the chord of C, in fundamental position,




is $\begin{smallmatrix}8\\5\\3\end{smallmatrix}$. To simplify the matter, it is agreed among harmonists that when there is no figuring with a bass note, it shall be understood that $\begin{smallmatrix}8\\5\\3\end{smallmatrix}$, i.e., the common chord in fundamental position, is intended; and when it is necessary to indicate a common chord by figures, the full set is abbreviated to one or two of them as the case may be. This will be understood later. The full figuring of the first inversion



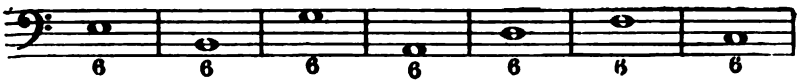

is $\begin{smallmatrix}3\\6\\3\end{smallmatrix}$ or $\begin{smallmatrix}6\\3\end{smallmatrix}$ when the *third* is not doubled; this is usually abbreviated to 6, which, placed under a bass note, *indicates the first inversion* of a common chord. This means that the root is a third below the bass note. The procedure in such case is, *find the third* below the bass note; this is the root; find the elements of the common chord on the root, doubling the root or the fifth as the location of the voices in the preceding chord may require. Because of the figuring, this inversion is called

THE CHORD OF THE SIXTH.

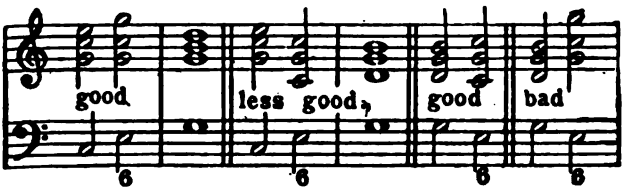
To become familiar with the process above given, construct the following chords, *in each case doubling first the root, then the fifth.*

Until we reach the subject of "Open Position," (Chap. VII) *the three upper voices are not to exceed the limits of one octave;* that is, the tenor cannot be more than an octave from the soprano.

In chords of the sixth the soprano and tenor will often be just an octave, as in the above example.

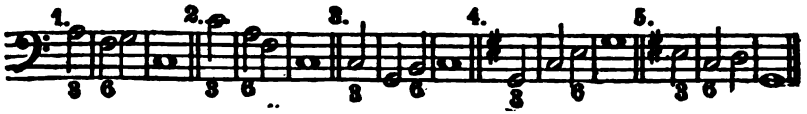


Whether the *root* or the *fifth* is to be doubled, depends upon the connection; the doubling should be such as involves the simplest progression from the previous chord, thus:



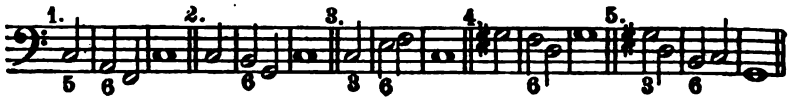

In the following chords of the sixth, the *root* is to be doubled.

EXERCISES.

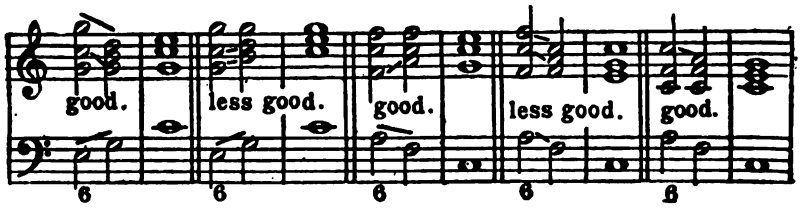



In the following chords of the sixth, the *fifth* is to be doubled.

EXERCISES.



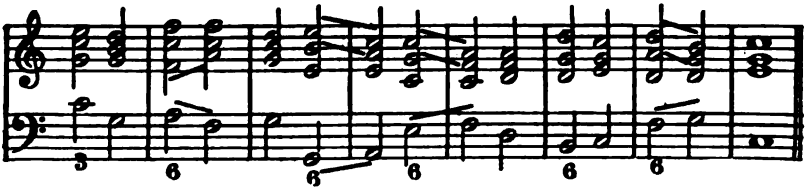

*When the tone that is doubled in the chord of the sixth appears in the following chord, let it usually be retained in that voice which will cause the other voices to move contrary to the bass, thus:*



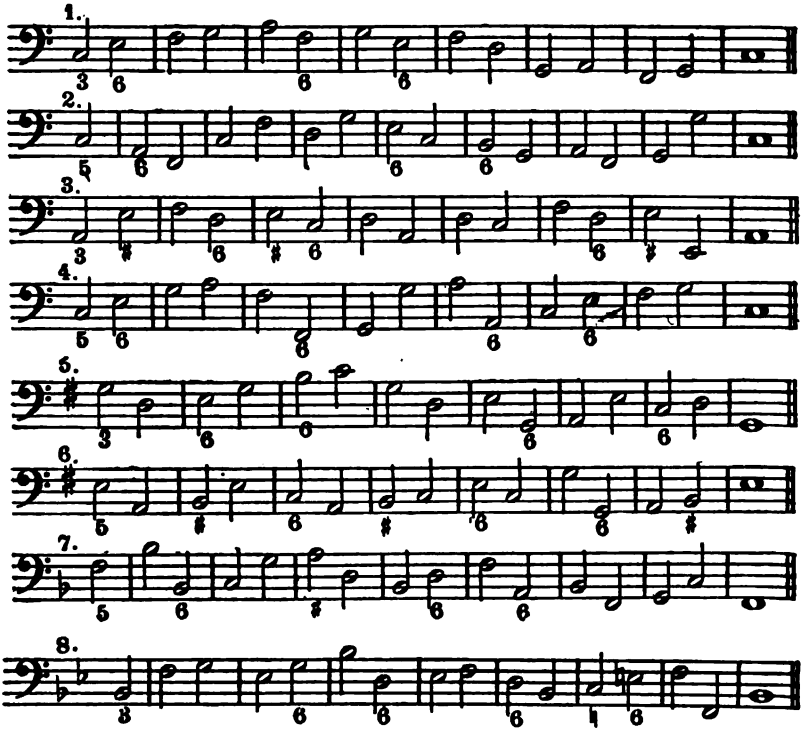

The melodic effect of the soprano must often determine the doubling. In the following exercises the pupil is to use his own judgment in doubling the root or fifth, observing the same rules for the close and smooth connection of chords as were followed in all previous exercises. But it is to be observed that the *"Three Primary Rules"* for the connection of chords have their most particular application in the use of the chords *in fundamental position.* They

are very often, but not so invariably, applicable in the use of inversions. The pupil must therefore rely a little more upon his own discretion, *aiming constantly to secure the smoothest progression of the harmony, and the most melodic effect of the soprano.*

ILLUSTRATION.

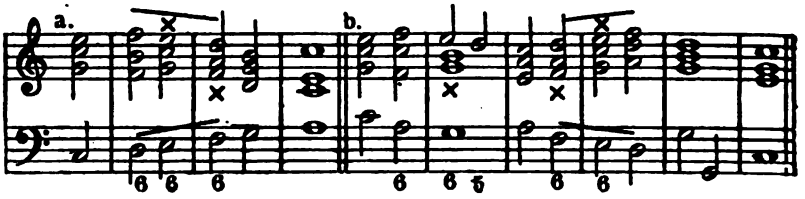


EXERCISES.



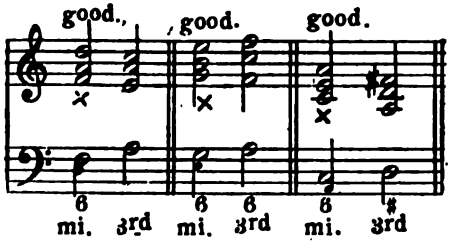
DOUBLING THE BASS NOTE.

For ease and smoothness of progression, especially when two or more chords of the sixth occur in succession, it is often desirable to *double the bass note, thus:*




(In the second measure of (b) the common chord following the chord of the *sixth* is indicated simply by a 5).

According as the triad from which the chord of the sixth is derived is major or minor, the bass note in the chord of the *sixth* will be a major or a minor third above the root. If it be a minor third the effect of doubling it is much better than when it is a major third; and when minor, no particular pains need be taken to avoid its doubling. Indeed it is sometimes better to double it for variety. Observe this doubling in the above illustration.

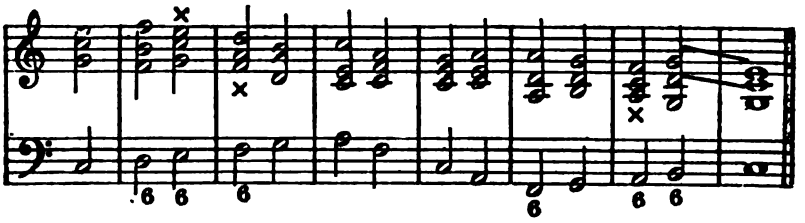



If the bass note be a *major* third from the root, it can be satisfactorily doubled *when the voice that doubles passes diatonically through the octave of the bass, to the next degree.* In such case the effect is good. (See above at (a) and (b) .)

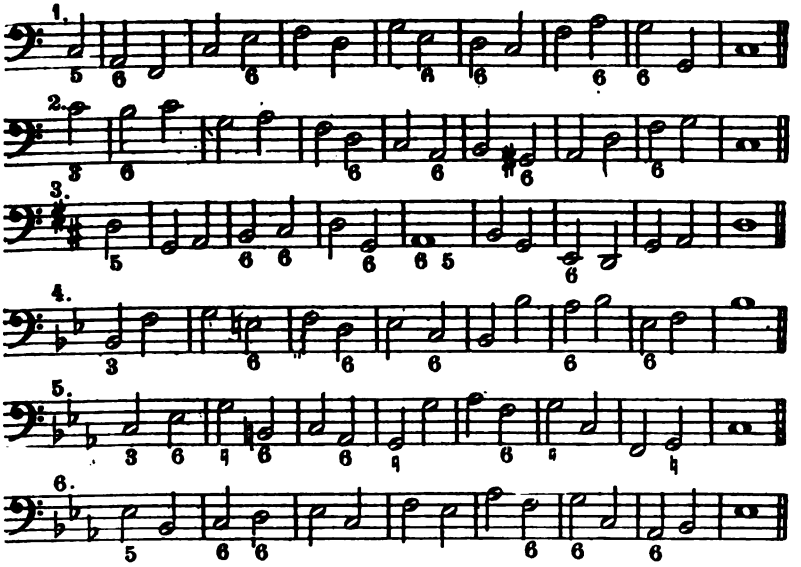
The foregoing constitute the two chief exceptions to the rule against doubling the bass in chords of the *sixth.*

In the following chords of the *sixth,* sometimes the root or fifth is to be doubled, and sometimes the bass note (the third), according to the rules given above. These exercises require *careful study* in order to become familar with the varied treatment of this chord, *which requires more care than any other chord in Harmony.* As the variety of chords increases, there will be increasing opportunity for individual judgment and taste; therefore let not the pupil fail of *constantly having the sense of the effect,* as he writes the exercise, playing it over after writing, to correct any erroneous impression.

ILLUSTRATION.



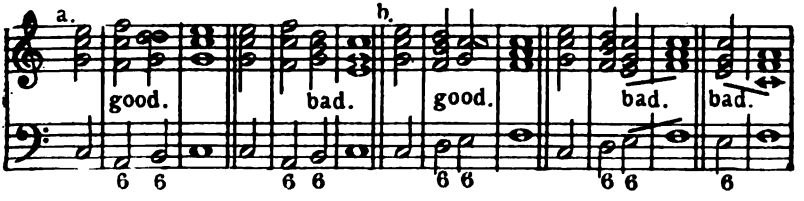
EXERCISES.



The justification of doubling the bass when it is a major third, is found in the smoothness of progression, and in the fact that the part that doubles the bass has a *decided melodic movement*, from which it cannot be turned aside for the sake of avoiding the doubling.

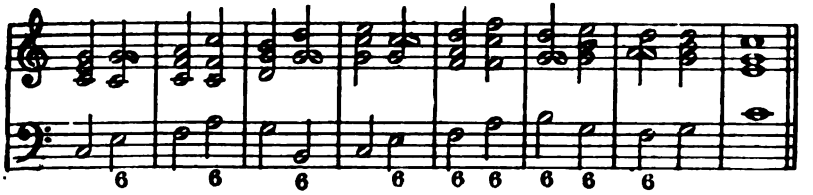
DOUBLING IN UNISON.

In a succession of chords of the sixth, it is often advisable to bring two voices into unison, as in the following.

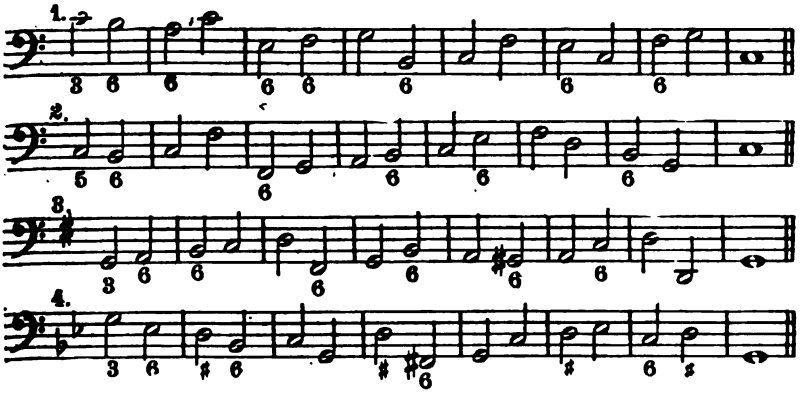


At (a) it is bad to double the "leading tone", which leaves as the best alternative the bringing of soprano and alto into unison. At (b) the avoidance of parallel octaves or a bad doubling of the bass (a major third from the root) is also by means of a unison. This unison of two voices is a most convenient device for avoiding faulty progressions, and should be kept in mind. To become familar with this disposition of the voices, let two of them be brought into unison *as often as possible* in the following exercises, only not in two successive chords.

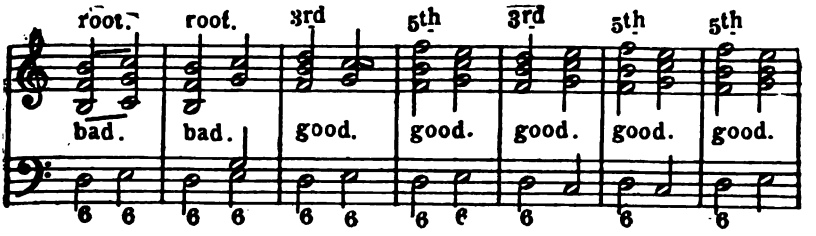
ILLUSTRATION.



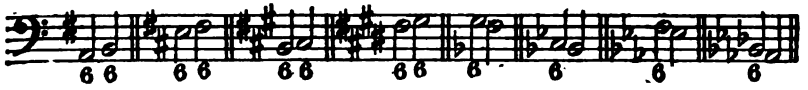
EXERCISES.



In the chord of the *sixth* on the second of the scale, either the bass note (the third) or the fifth must be doubled, and *not the root*, which is in this case the "leading tone".



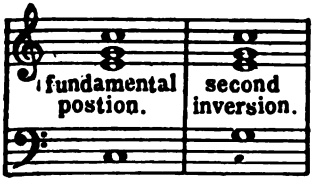

In accordance with the above, harmonize each of the following fragments *twice*, first with the *bass note* doubled, then with the *fifth*.



The *diminished triad* (on the 7th of the scale), which we found so unserviceable in the fundamental position, is quite effective and finds its principal use in its first inversion, the above chord of the sixth on the 2nd of the scale.

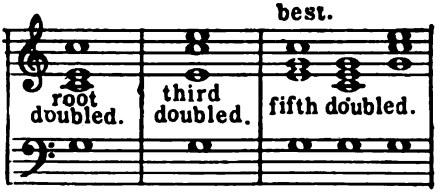
There are unusual difficulties in the diversified use of the chord of the sixth, and the pupil is advised carefully to study the various points above noted, that he may be able, in all variety of circumstances, properly to use this chord, which, all in all, is ***the most difficult chord in Harmony.***

### The Second Inversion.



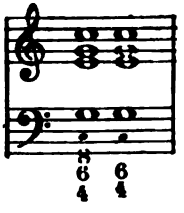

By putting the *fifth* of the chord in the bass we obtain a new harmony, and yet *radically* the same as the fundamental position and the first inversion, as the root is identical.

As in the first inversion, so here, we can double either the *root, third* or *fifth.*




It is by far the most satisfactory to double the *fifth* (i.e. the bass), both in itself considered, and as securing a smoother progression to the next chord; and for the present we will consider this the only allowable tone to double.

The full figuring of this chord,



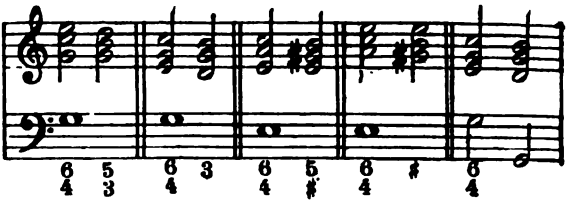
is $\begin{smallmatrix}8\\6\\4\end{smallmatrix}$ which is usually abbreviated to $\begin{smallmatrix}6\\4\end{smallmatrix}$. From the figuring it gets the name of

CHORD OF THE SIXTH-AND-FOURTH.

The procedure in writing every such chord is, reckon down a fifth from the bass note; this gives the root; determine the elements of the common chord on this root, and place them in the upper voices, *doubling the fifth* (i.e. the bass note).

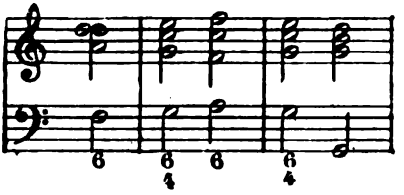
It should be distinctly understood that figures always indicate the intervals of the upper voices *from the bass note*, and never from the root. This mistake is often made by pupils. Thus in the above example, 6 means a sixth from G, which is E, 4 means a fourth from G, which is C, and G-C-E are all the *diverse* elements of the C-chord, in the form of the *second inversion.*

The most common use of this inversion is in connection with the common chord founded upon the same bass tone:

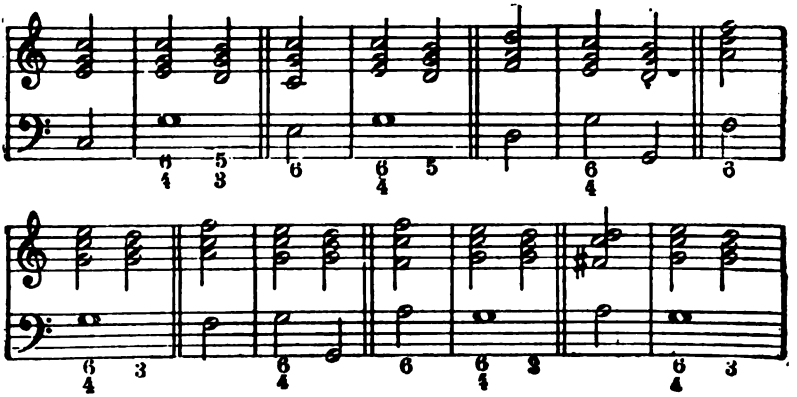



In such case the figures $\begin{smallmatrix}6\\4\end{smallmatrix}$ must be followed by figures that represent the common chord in fundamental position, either $\begin{smallmatrix}5\\3,\end{smallmatrix}$ or 5, or 3. When the *third* in the second chord is to be affected by an accidental, the accidental alone is sufficient to represent the second chord. If the bass *moves an octave* in the last half of the measure, no figure is necessary over the *second* bass note. (This is all illustrated in the above examples.)

The chord of the *sixth-and-fourth* is sometimes followed by a chord of the *sixth* on the next degree above.

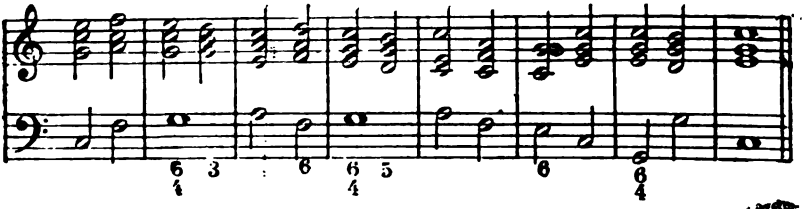


It can be preceded by various chords,

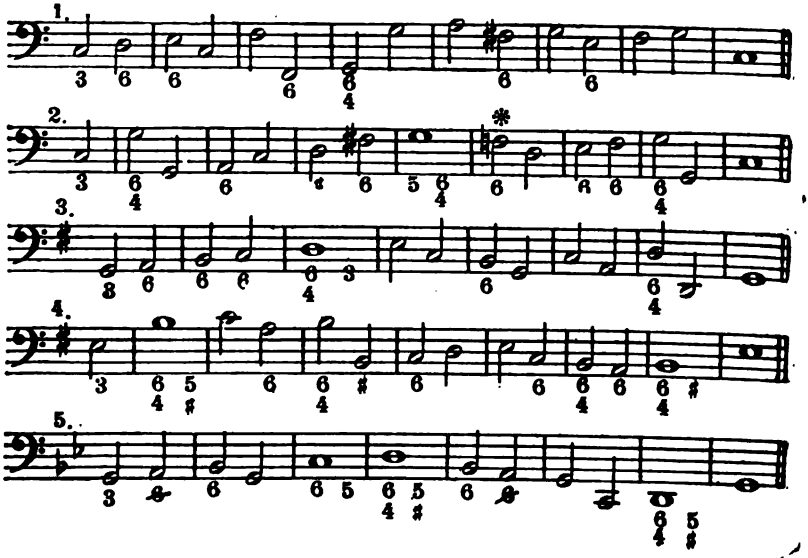


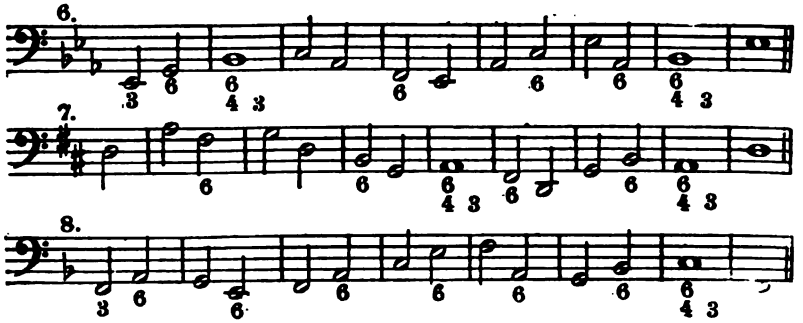
No difficulty will be found in the writing of this chord, if the previous general rules are followed.

ILLUSTRATION.

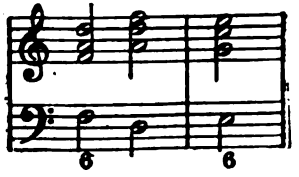


EXERCISES.

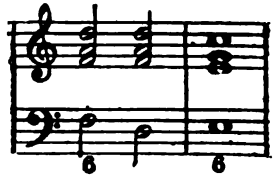




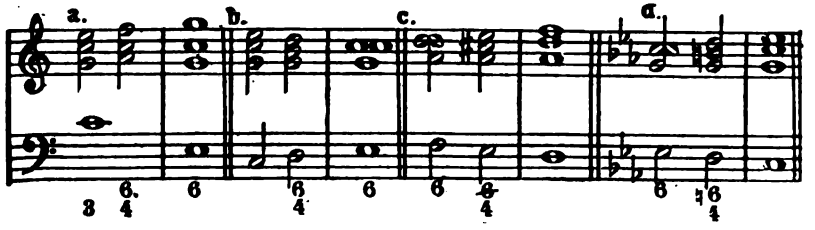

The rule to retain a tone in common in the same voice does not necessarily apply when a fundamental chord is in immediate connection with one of its inversions. In such case, the two chords are radically the same, and there is no effect of disconnection if the voices change their position. The principle is the same as in the case where the bass moves an octave, and the other voices can change their *position* (see page 28). Thus in the middle of the second exercise above, a better effect is secured by changing the position as follows,



instead of

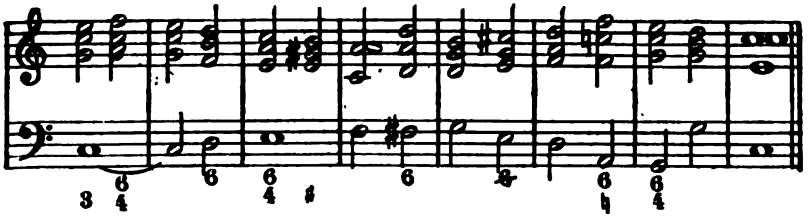


The only chord of the sixth-and-fourth thus far used has been that whose bass was the dominant, i.e., the second inversion of the tonic chord. This is the most common, but others can be used with no more difficulty, and with good effect.

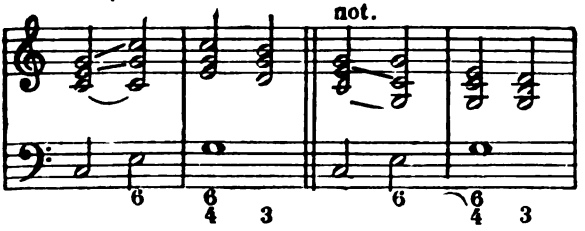


The same rules govern the progression as heretofore. When any interval from the bass except the *third* is to be affected by an accidental, the accidental is placed before the figure expressing the interval, as ♭6, ♮4. As an exception to this rule, a ♯ belonging to any figure (except 3) is indicated by *a line through the figure* (as at c, above), while a ♭ or ♮ is placed before, as at (d). By some harmonists the accidental is placed (with less propriety) *after* the figure, 6♮, 5♯. The figuring is also sometimes found above the bass note, which is not advisable, as it interferes with the tenor when placed on the bass clef.

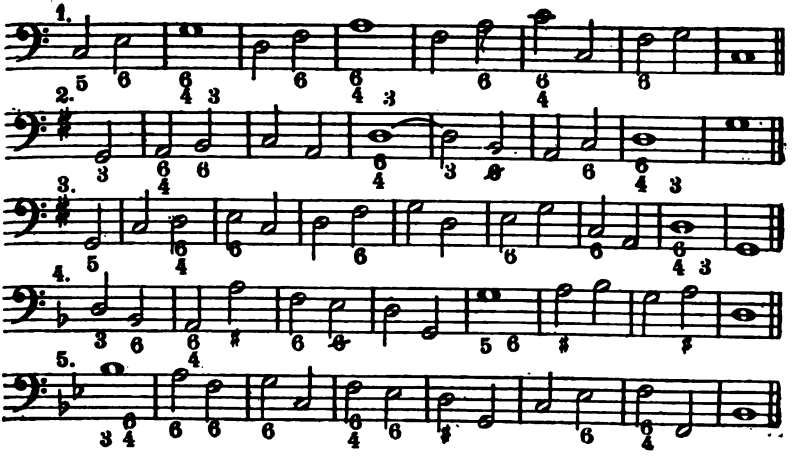
ILLUSTRATION.

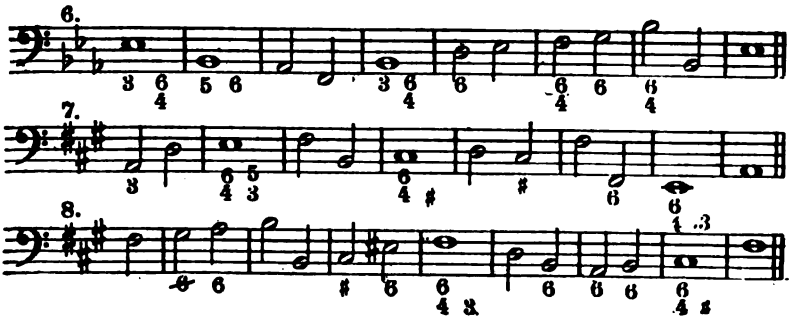


When there are two tones in common in two adjacent chords, retain that one which will secure the best melody, and the best position of the voices, thus:




EXERCISES.





SUMMARY.

Meaning of "fundamental position" of a chord:—Two inversions of a common chord:—What should be doubled in first inversion:—meaning of figures under bass notes:—Full figuring of common chord:—Full figuring of first inversion:— Its abbreviation:—The procedure in writing chord of the *sixth*:—Whether root or fifth shall be doubled:—Which doubled tone to retain in next chord:—Primary Rules less applicable in inversions:—Two exceptions, allowing bass to be doubled:—Doubling in unison:—Doubling in sixth-chord on second of the scale:—Chief use of triad on seventh degree of the scale:—Doubling in second inversion:— Full figuring, and its abbreviation:—Procedure in writing chord of sixth-and-fourth:—Figures express intervals from what:—Meaning of $\frac{6}{4}\,\frac{5}{3}$ or $\frac{6}{4}\,_{3}$ or $\frac{6}{4}\,\sharp$:—Moving all the voices when the fundamental position and inversion are in connection:—Meaning of accidental before a figure, and of a line through a figure:—Procedure when there are two tones in common in successive chords.

## CHAPTER V.

### THE CHORD OF THE SEVENTH.

We now come to the second elementary chord in Harmony, called the *chord of the seventh,*

in reality an outgrowth of the common triad, formed by adding to it the *third* above the *fifth,* that is, the *seventh* above the *root;* hence called. *the chord of the seventh.*

There is a peculiarity of this *seventh,* which distinguishes it from every other tone in the chord, and stamps a new quality upon all the chords of the seventh; viz., *a strong and constant tendency to*

*lead downward one degree.* This tendency determines the progression of the voice containing the seventh, and thus in a degree conditions the next chord. This can be illustrated by the *seventh* and the *root,* omitting the other tones of the chord.

This inherent *drawing* of the *seventh* introduces a new quality into our chords, illustrated in a degree by the *leading tone* of the scale, and binds together the harmony more closely than could be the case in the use of only common chords.

### The Resolution of the Seventh.

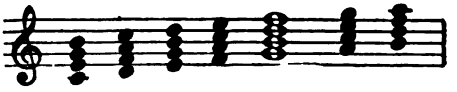
The seventh, in its discordance which, if long continued, is intolerable to the ear, finds a point of rest in the tone below. This leading downward is called the *resolution of the seventh.* and the following chord is called its resolving chord, and the tone below the seventh its *resolving tone.*

The peculiarity of the *seventh,* stated above, gives rise to the law

**The seventh must always be resolved, and in the same voice.**

As the seventh can be added to every triad, we shall have seven chords of the seventh in the scale:

C Major.



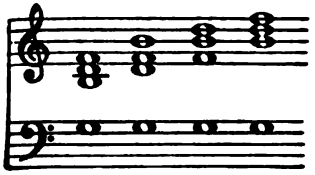
### Primary and Secondary Seventh-Chords.

The seventh-chord by far most effective and most frequently used is the one founded on the fifth of the scale, hence called the *dominant-seventh-chord.* This is so pre-eminent above all the others as to be the *one primary seventh-chord,* and the remaining six are the *secondary seventh-chords.*

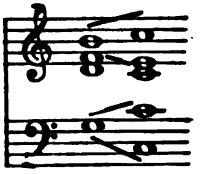
### The Dominant-Seventh-Chord.

In distinction from the *common chord* it will be observed that every *seventh-chord* has four instead of three diverse tones; hence the *seventh-chord requires no doubling in four-part harmony.*

The dominant-seventh-chord can appear in the following positions:

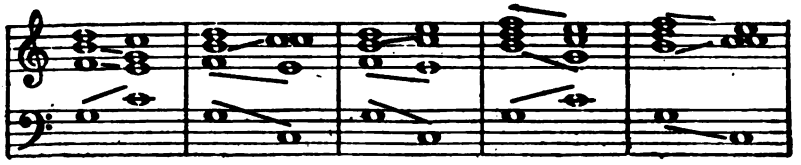


The most common use of this chord is in connection with the tonic chord, which *resolves* the seventh of the dominant, and affords an easy progression of the other voices:



The *seventh must* descend (to E); the *third (leading-tone) must* ascend ( being in soprano); the fifth (D) has no decided tendency like the seventh and the third (leading-tone), and is to move in that direction which will result in the fullest harmony. The bass can descend a fifth or ascend a fourth, to tonic.

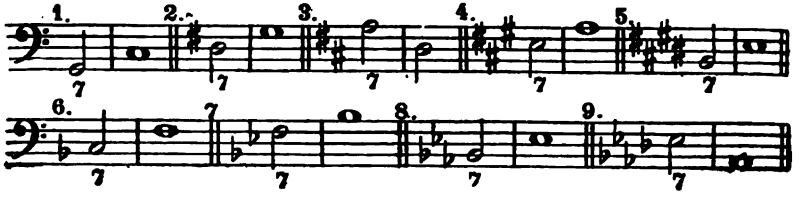
If other positions be chosen for the upper voices the progression of the seventh *remains the same,* that of the fifth and third may vary:



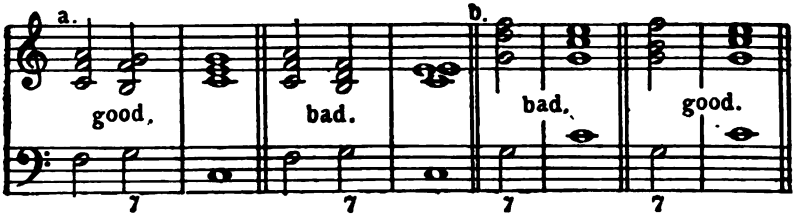
The *third,* the leading tone, when an inner voice, may descend if the bass ascends, as in the common chord. These different progressions should be carefully studied, that the difference may be clearly seen.

In accordance with the above, harmonize the following, with the *third,* the *fifth,* and the *seventh* successively, in the soprano, noticing the motion of the bass, as that controls the motion of the third (except when the third is in soprano).

(The chord of the seventh is indicated by the single figure 7, unless other of the intervals are to be affected by accidentals.)



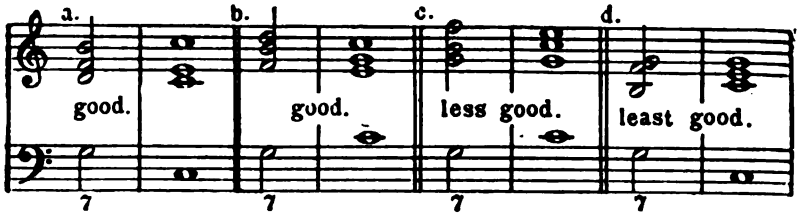
Although every seventh-chord, in itself considered, sounds better when all four diverse tones are heard, ease and smoothness of progression, and the better effect of future harmonies, often make it advisable to *double the root* (no other tone can be doubled except sometimes a *minor* third), thereby sacrificing either the third or the fifth.



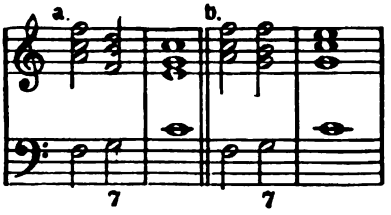

It is much better to sacrifice the fifth than the third, as at (b); consequently,

*In the seventh-chord, when the root is doubled, omit the fifth.*

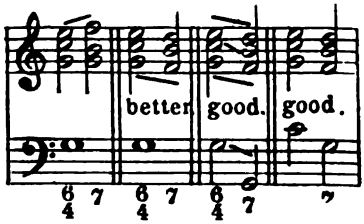
At the close of an exercise that position of the dominant-seventh-chord (which usually precedes the final chord) is preferable which will bring the soprano upon the tonic in the final chord, as this secures the most complete effect of a close; accordingly in the following example, (a) and (b) are preferable to (c) and (d) *for a closing effect.*



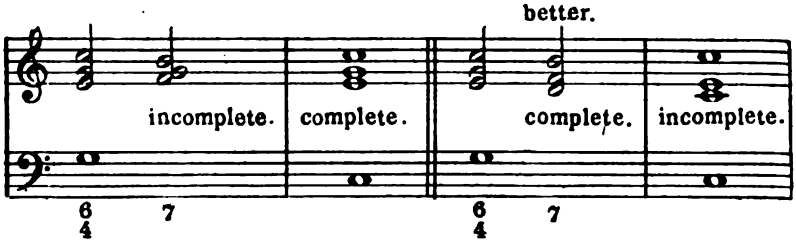

For this reason the following progression at (a) is better *at the close,* although it involves more motion, whereas the progression at (b) is better at any other point of the exercise:



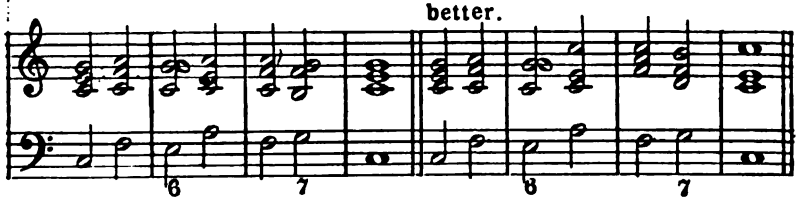

The effect is generally better to *descend* than to *ascend* to the seventh, *even though it involve parallel motion in all voices.*




The combination of the complete seventh-chord and the *incomplete tonic* chord is more musical than that of the *incomplete seventh-chord* and the *complete* tonic chord, even at the close of an exercise, thus:

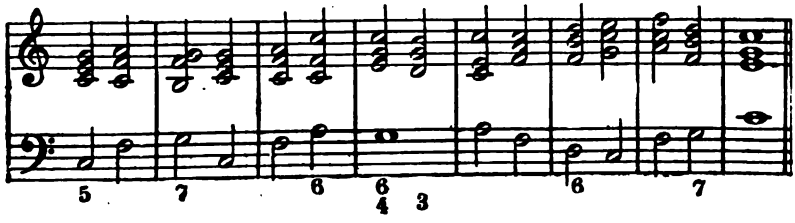



It is evident that in a work like this only the most general statements can be made. The pupil must seek to obtain the best effects, not by slavishly following the rules, but by consulting to a degree his own taste, thus quickening his musical sense. An exercise may be correctly written, and yet produce a monotonous impression. This is generally caused by *too little motion in the soprano,* thus:

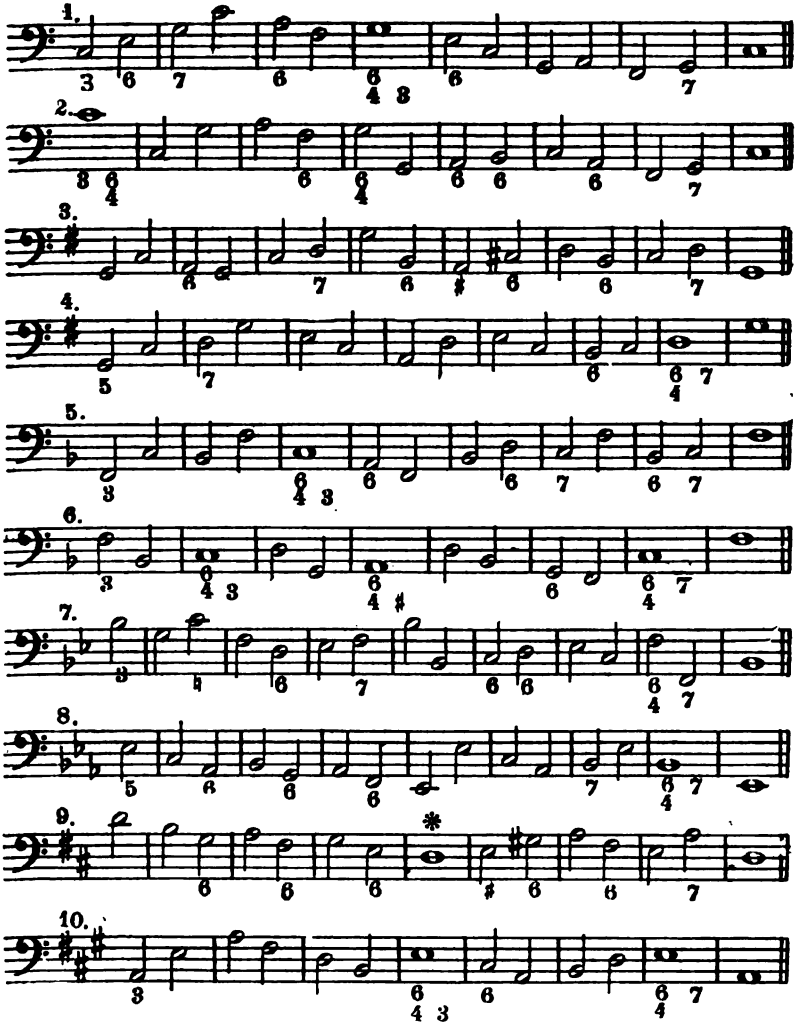



In working out the following exercises, the seventh-chord having been written, the *first thing* to do in the following chord is, to write the note that resolves the seventh *in the same voice in which the seventh occurs,* then move the other voices to their proper places.

ILLUSTRATION.

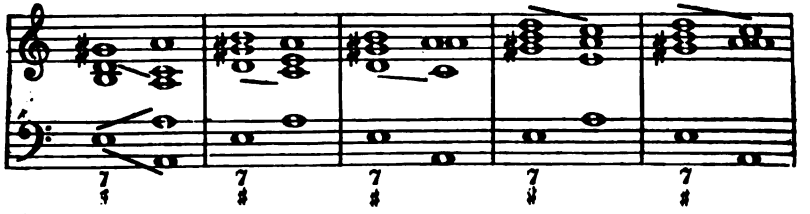


EXERCISES.



THE DOMINANT-SEVENTH IN THE MINOR SCALE.

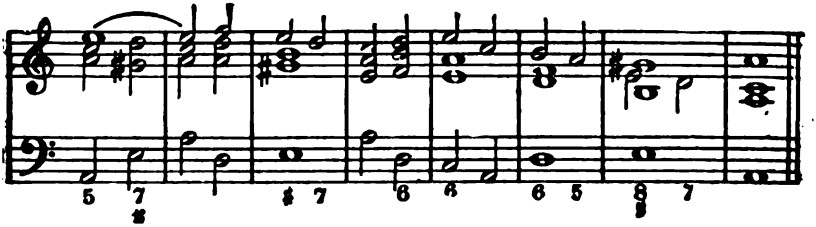
in A minor.



*In this measure write two positions of the same chord, so as to maintain the movement in half-notes.

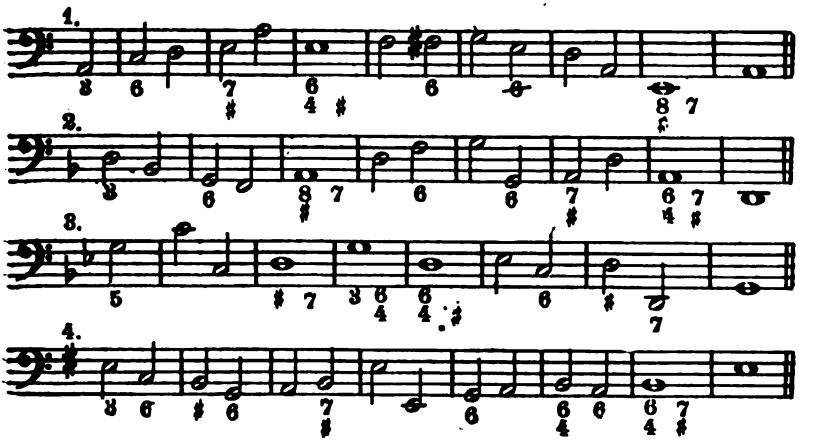
As will be seen above, the progressions are identical with those of the dominant-seventh in the major scale, and require no further explanation.

ILLUSTRATION.



(It is best that the voice having the 8 should take the 7, as in the last measure but one of the illustration.)

EXERCISES.



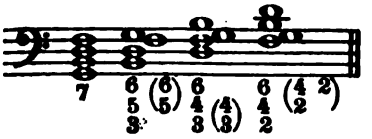
SUMMARY.

Formation of the seventh-chord:—Peculiarity of the seventh-interval:—Resolution of the seventh:—Primary and Secondary seventh-chords:—Difference between common and seventh-chords in doubling:—The commonest progression from dominant-seventh chord:—Figuring of seventh-chords:—When doubling is advisable:—What shall be doubled and what omitted:—Better descend then ascend to seventh:—Complete dominant-seventh, followed by incomplete tonic chord:—Monotony of exercise due to what:—Resolving seventh in the same voice.

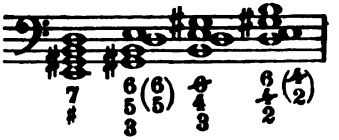
## CHAPTER VI.

### The Inversions of the Dominant-Seventh-Chord

In C major



in A minor

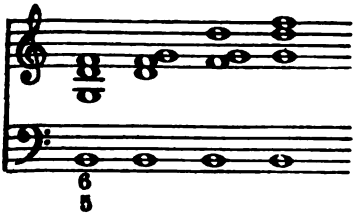


The dominant-seventh has *three inversions*. The first, formed by putting the third in the bass, has for its full figuring $\frac{6}{5}_{3}$, abbreviated to $\frac{6}{5}$, hence called

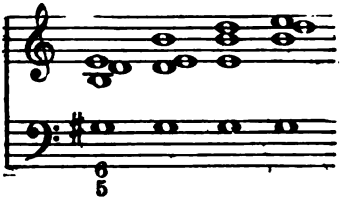
### The Chord of the Sixth-and-Fifth.

In the different positions as follows:

in C major

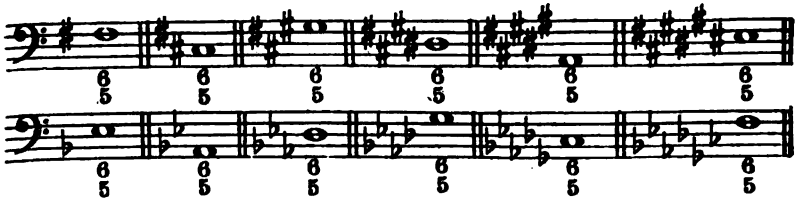


in A minor

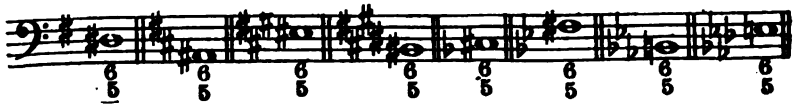


The process in writing a chord of the *sixth-and-fifth* is, *first find the root* (a *third* below the bass note); on the root construct a seventh-chord, so disposing the notes that the voices will move properly from the preceding chord. As a preliminary, write the following chords of the *sixth-and-fifth* in the different positions:

First inversion of dominant-seventh in major scales.



First inversion of dominant-seventh in minor scales.

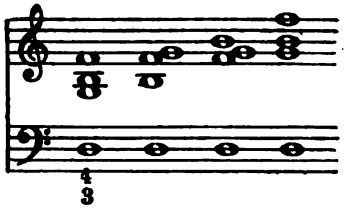


The second inversion, formed by putting the *fifth* in the bass, has for its full figuring $\frac{6}{4}_{3}$, abbreviated to $\frac{4}{3}$, hence called

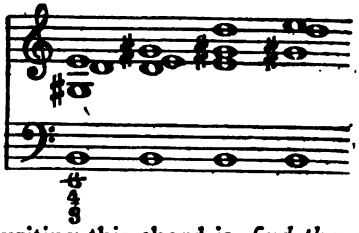
THE CHORD OF THE FOURTH-AND-THIRD.

In its different positions as follows:

in C major

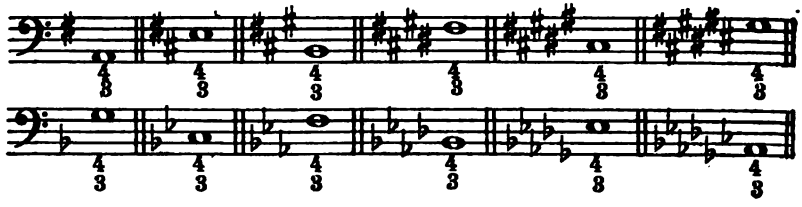


in A minor

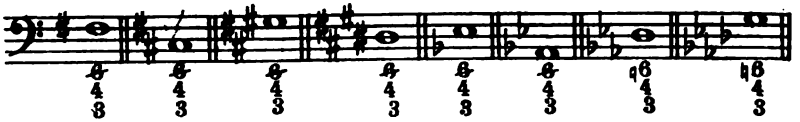


The process in writing this chord is, *find the root* (a fifth below the bass note); on the root construct a seventh-chord, disposing the notes as the previous chord requires. Write the following chords of the *fourth-and-third,* in the different positions:

Second inversion of dominant-seventh in major scales.



Second inversion of dominant-seventh in minor scales.

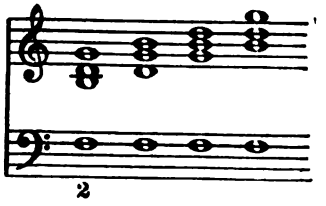


The third inversion, formed by putting the *seventh* in the bass, has for its full figuring $\begin{matrix}6\\4\\2\end{matrix}$ abbreviated to 2, hence called

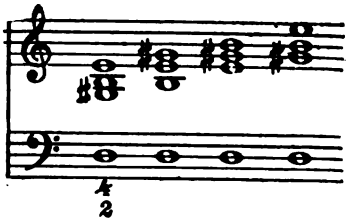
THE CHORD OF THE SECOND.

In its different positions as follows:

in C major

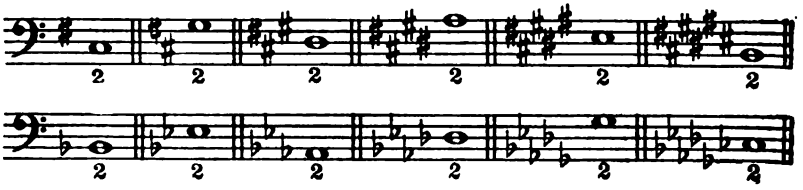


in A minor

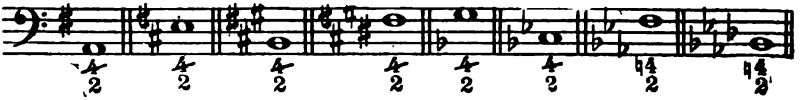


The process in writing this chord is, *first find the root,* (a seventh below the bass note); on the root construct a seventh-chord, disposing the notes as the previous chord requires. Write the following chords of the second, in the different positions:

Third inversion of dominant-seventh in major scales.



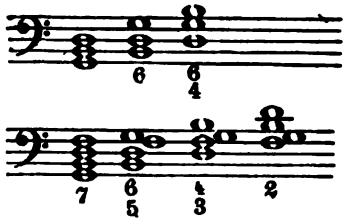
Third inversion of dominant-seventh in minor scales.



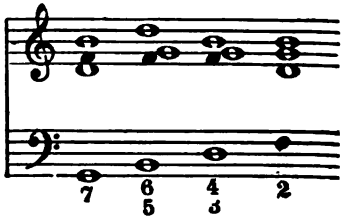
It will assist the memory to notice that the figures follow in regular order from 7 downward, thus,

fundamental form.....7
first inversion.....6 5
second " .....4 3
third " .....2

The figuring of the inversions must be *well memorized,* to prevent any confusion among themselves, and to keep them distinct from the inversions of the common chord. The common chord with its inversions, and the seventh-chord with its inversions can be compared as follows:




That tone which in the fundamental position is the *seventh* has precisely the same tendency to *lead downward in all the inversions.* Accordingly we speak of that tone which is seventh in the fundamental position *as still the seventh,* whatever the *inversion.* Thus in the following four chords F is equally the seventh in all of them,

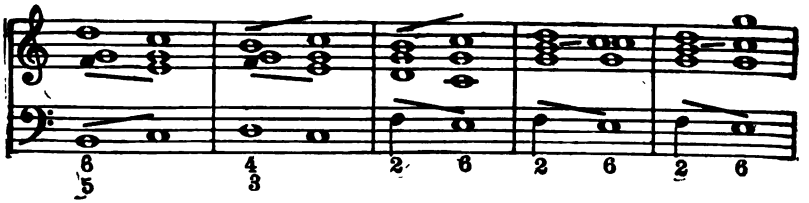



and the resolution of that tone is the first thing to be attended to in the following chord. B is also called the third in all of them, and has a constant tendency (as leading tone) upward to C. Similarly G is the root, and D is the fifth in them all. This uniform method of designating the tones of the chord serves to keep constantly in mind the *derivative nature* of these new harmonies, and simplifies the progression of the voices, by finding them so largely the same as in the fundamental form.

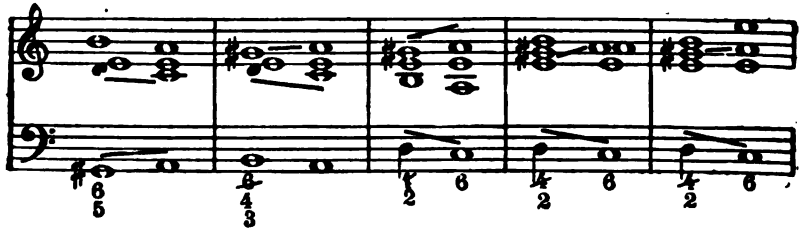
In the fundamental form we frequently find it necessary to double the bass and to sacrifice the fifth (rarely the third). In the inversions there is *no doubling,* consequently *no sacrifice* of any element of the chord. *Each inversion must contain all four elements of the chord.*

From the foregoing we are now able properly to resolve all three inversions. The various positions of the three upper voices can cause no difficulty when the true character of these chords is understood.

DOMINANT-SEVENTH INVERSIONS IN C MAJOR.

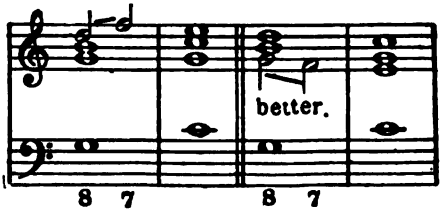


DOMINANT-SEVENTH INVERSIONS IN A MINOR.



(Let it be remembered that figures express the intervals from the actual bass, not from the *root*.)

Although it is generally better to *descend to the seventh,*




**yet** it is sometimes better to *ascend,* when a decidedly melodic movement can thereby be attained, thus:

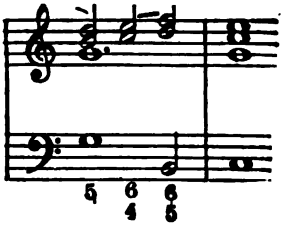
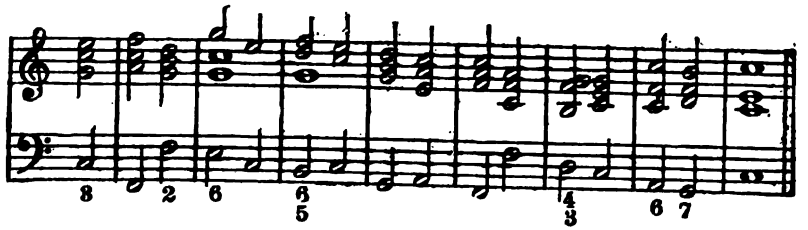
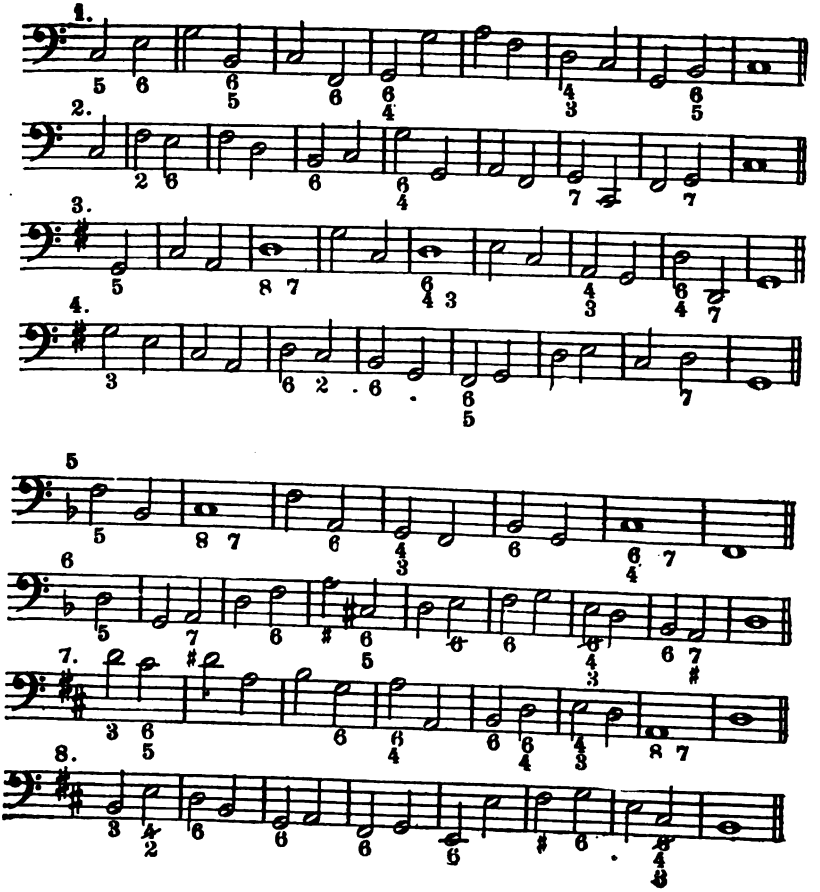
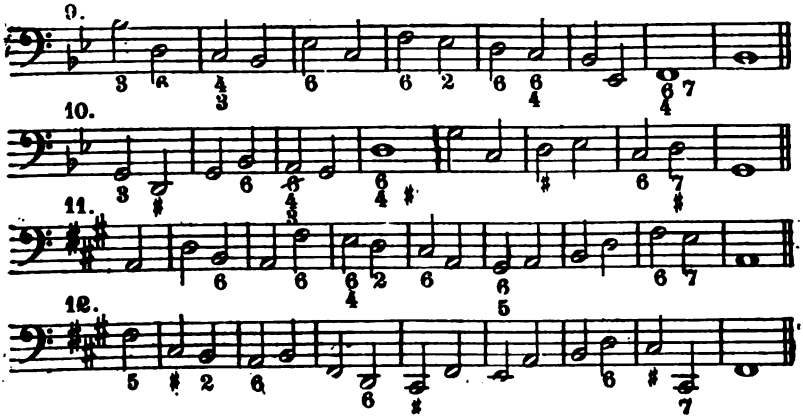


ILLUSTRATION.



EXERCISES.





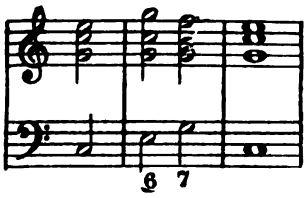

SUMMARY

Name of first inversion of a seventh-chord, its full figuring and abbreviation:—Procedure in writing chord of sixth-and-fifth:—Name of second inversion, full figuring and abbreviation:— Procedure in writing it:—Name of third inversion, full figuring and abbreviation:—Procedure in writing it:—Order of figures, from fundamental to third inversion:—The same tone to be regarded as *seventh*, in fundamental position and in all inversions:—The law in all inversions as regards doubling:—Sometimes ascend to seventh for melodic effect.

## CHAPTER VII.

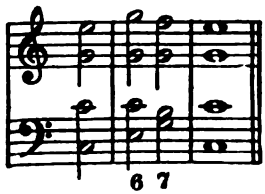
CLOSE AND OPEN POSITION. CONCEALED FIFTHS AND OCTAVES. SCORE. CROSS-RELATION. SIGHT-READING.

Thus far all our exercises have been written with the three upper parts as closely together as possible. As a result these three voices have always been *within the limits of an octave.*



Chords written in this manner are said to be ***in close position,*** which is the easiest manner of writing for the beginner. But it is evident that a permanent limitation of these three voices to the compass of an octave would eventually produce monotony, and the best effect can often be secured only by *spreading these voices,* and the harmony

is said to be *in open position* when the three upper voices do not fall within the limit of an octave, thus:

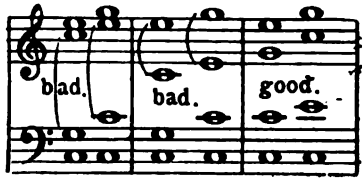



(It will be seen that the above harmony is identical with the preceding example, the only difference being that the voices are *spread*).

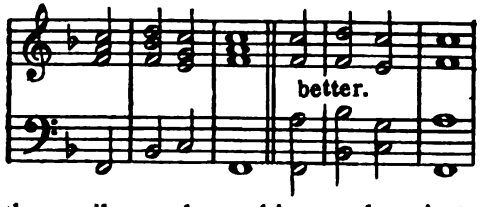
The *octave* is the boundary line between *close* and *open* position, and soprano and tenor being in octave we may call the position either *close* or *open*. It is to be understood that the alto must *always* lie between soprano and tenor:—that is, the parts *are not to cross each other*. An octave or less between soprano and tenor makes *close* position. An octave or more between soprano and tenor makes *open* position.

The acquirement of facility in open position, and at the same time a review of the subject up to this point, is the object of the following sets of exercises, covering the several points.

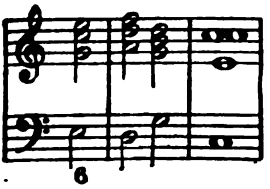
Attention must be called to two matters: first, it is never allowable for any two adjacent voices, *except the tenor and bass*, to be distant from each other *more than an octave*, as it invariably produces a thinness of effect, which is never agreeable, thus:



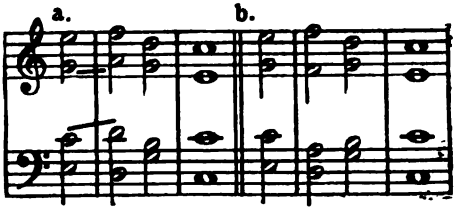

This prohibition does not avail in the case of tenor and bass, but it is better even in this case that the interval should not too largely exceed an octave.



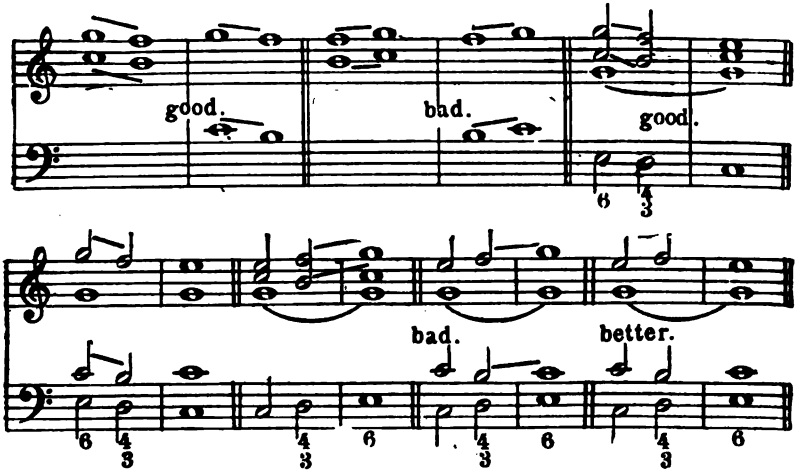

Secondly, the pupil must be on his guard against *parallel fifths*, which are more likely to occur in *open* than in *close* position. Thus the following, in close position,



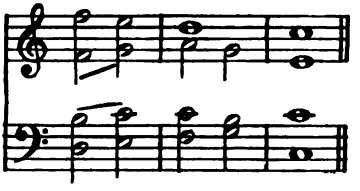

when put into open position, as at (a), shows parallel fifths; it must therefore be arranged as at (b).




Two voices can move diatonically from a *perfect* to a *diminished* fifth, but not from a *diminished to a perfect fifth,* thus:



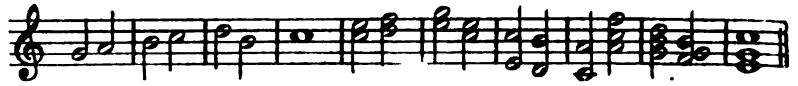

The progression from a diminished to a perfect fifth is nevertheless sometimes so inconspicuous as to be used even by good writers, especially when it occurs between alto and tenor, thus,



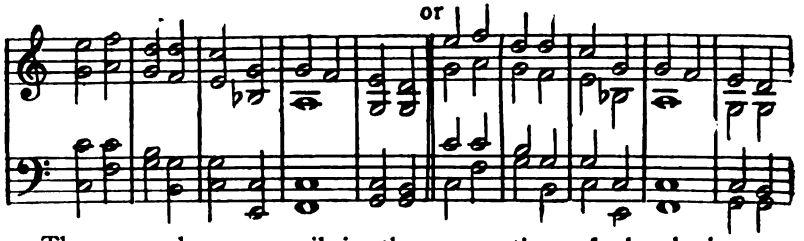
but in general, the prohibition is valid.

Note. A word of explanation in regard to the correct *notation* of exercises in open position.

The stem of a note should be so placed as to bring it, as much as possible, upon the staff. If the note be *above* the middle line. the stem should be turned down, if *below* the middle line, it should be turned up. If two or more notes *average* above the middle, and are joined by one stem, it should be turned down; if they average below the middle, it should be turned up.



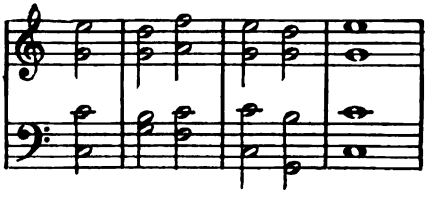
In "close position," the three upper voices are commonly joined by one stem, on the soprano staff. But in "open position," soprano and alto are written on the upper staff, and the tenor is commonly placed on the bass staff. In this case, each pair of voices can be united by a single stem, as above, or each voice can have a separate stem, in which case the soprano and tenor stems must be turned up, the alto and bass stems turned down, thus:



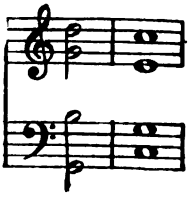

The same laws prevail in the connection of chords in open as in close position. Let the illustrations be carefully examined.

PRIMARY COMMON CHORDS.

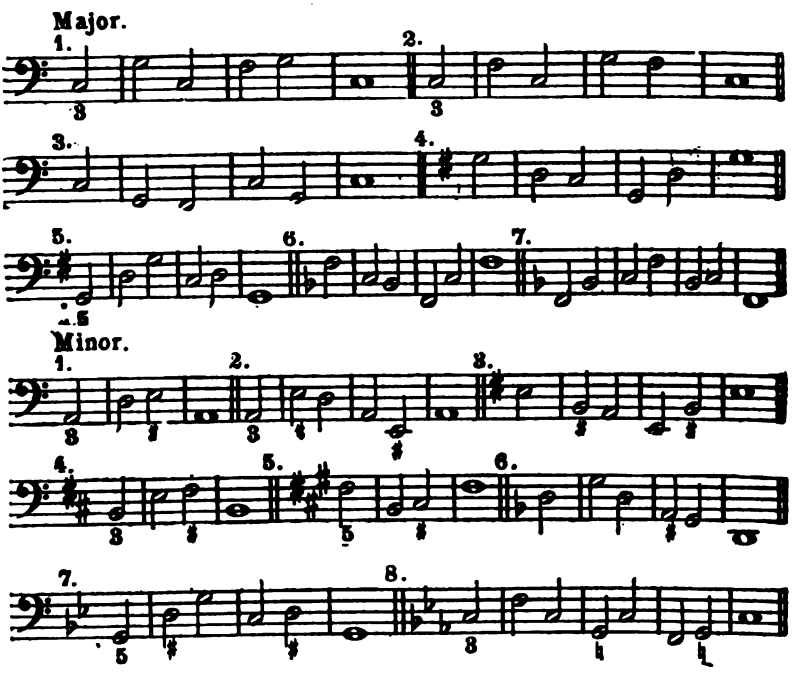
ILLUSTRATION.



or last two chords thus.



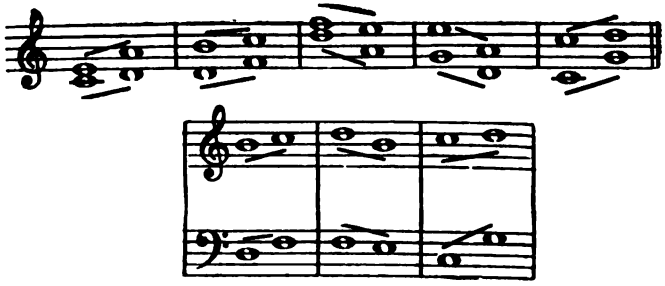
EXERCISES.




CONCEALED FIFTHS AND OCTAVES.

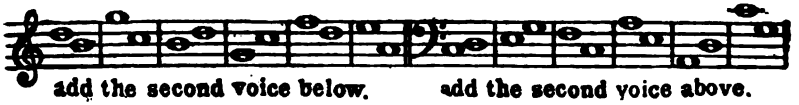
Before proceeding further in exercises in open position, it is desirable to explain a progression which is of frequent occurrence, under some circumstances productive of one of the worst effects in Harmony, under others, perfectly permissible. This progression is that of a *concealed fifth* or a *concealed octave.* (The fifths here spoken of are only the perfect fifths).

A *concealed fifth* occurs if two voices, at any other interval than a fifth, progress *in parallel motion to a perfect fifth,* thus:



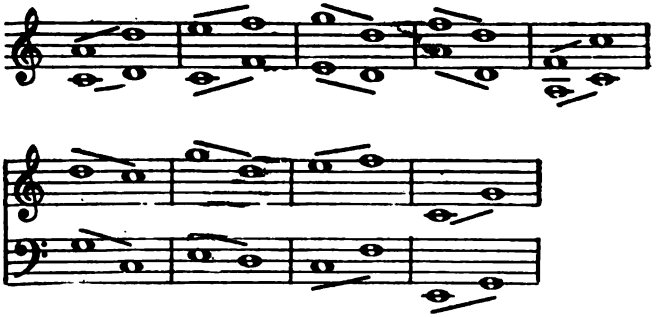
*Concealed fifths* may exist between any two voices in the harmony. To make sure of this progression being perfectly under-

stood, let the pupil add another voice to the one given below, involving the progression of *concealed fifth.*



add the second voice below. add the second voice above.

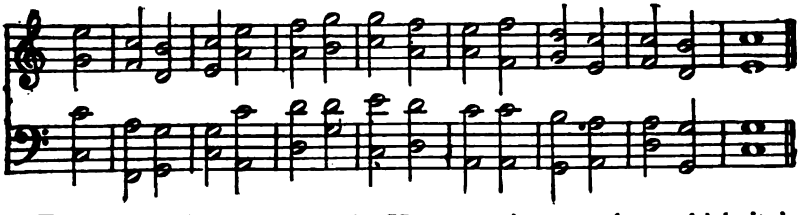
Similarly, a *concealed octave* occurs if two voices, at any other interval than an octave, progress *in parallel motion to an octave,* thus:



Add another voice to the one given below, involving the progression of *concealed octaves.*

add voice below. add voice above.

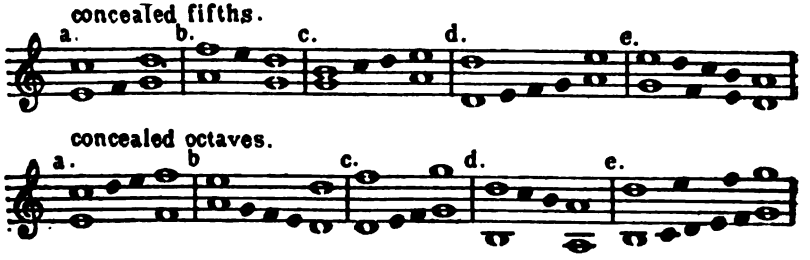
Let the pupil find all the *concealed fifths* and *octaves* in the following, comparing each pair of voices.



There is perhaps nothing in Harmony in regard to which it is more difficult to give rules than concerning *concealed fifths* and *octaves.* Certain it is that text-books and teachers in general make too much ado over them, so that they become a perfect bugbear to the pupil. The difficulty of the case is, that while many of these concealed fifths and octaves are inadmissible, a large number of others are admissible, and even unavoidable, and it is impossible to make any plain and simple classification of the good and the bad. After all that shall be said, much must still be left to the musical

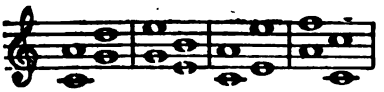
instinct to determine the propriety or impropriety in many individual cases.

The usual explanation of their bad effect is as follows; when a voice moves *by a skip*, the intervening tones are more or less faintly suggested. Thus in the following,

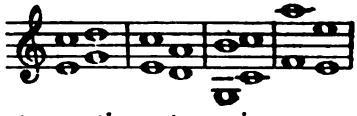



the black notes are those that intervene in the skip, and the *last intervening* note forms a fifth or an octave with the other voice, followed by the *expressed fifth*, or *octave*. The first fifth or octave being suggested in the above manner, and the second being expressed, it results in a *concealed* sort of parallel fifths or octaves, hence the name, *concealed fifths and octaves*. Once more let it be said that the "concealed" fifth or octave is not the one that is actually existent and audible, but the one that lies between an expressed and an unexpressed, or between two unexpressed tones. It is imagined rather than heard, and is thus in a sense "concealed."

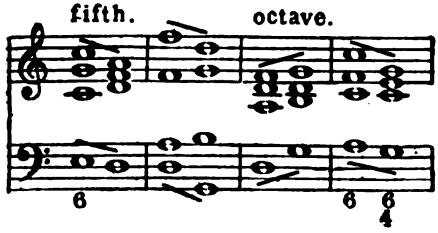
The fallacy in the foregoing explanation is, that those cases in which *both* voices make a skip, (and accordingly *both* tones of the first fifth or octave are only *suggested*, as at (e) above), are the most objectionable; and on the other hand, those cases in which one voice moves *by a degree*, (and so the first fifth or octave is most evident, by having one of its tones actually expressed, as at (a), (b), (c), (d), above), are the most admissible. But we are not concerned here with the *philosophy* of the matter, particularly as the philosophy is so decidedly "concealed;" our purpose is fulfilled in helping the student as far as possible to determine what to avoid and what to permit. Whatever the explanation, the fact remains that no chord is fully satisfactory in which the *fifth* or the *octave-relation* of any two voices is made *unduly conspicuous;* and it *is* made more or less conspicuous by the progressions called "concealed fifth and octave." It is most conspicuous *when both voices make a skip:*



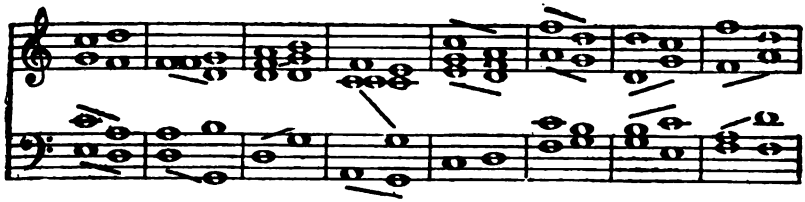
less conspicuous *when only one voice skips:*



more conspicuous *between the outer voices:*

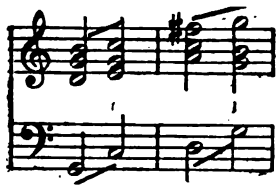



less conspicuous *between outer and inner, or two inner voices.*



The most detailed classification that could possibly be made would still require many exceptions, and be all too burdensome to the memory. To simplify the law to practical limits it may be stated as follows:

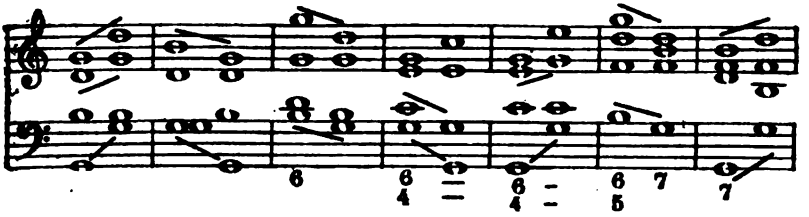
*Concealed fifths and octaves are most to be avoided between the outer voices, but are allowable in the case of any two voices, when either of the two moves only one degree (best of all when the single degree is a semitone), thus:*



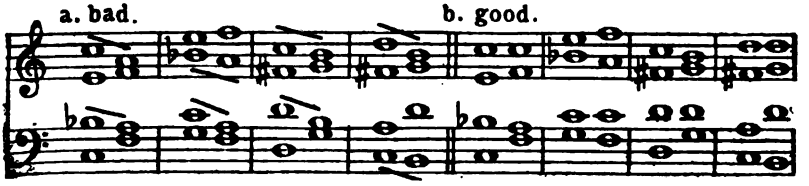
*or in the case of the two inner voices when both skip, the combined progression of all four voices being good.*

The above rule is the best general statement of the case. But it is not offered as being infallible; it only admits of fewer exceptions than any other. The proper observance of the Three Primary Rules for chord-connection, and particularly contrary motion between the three upper voices and the bass, will largely eliminate the objectionable cases. There are two exceptions to the general rule that require notice.

First: Concealed fifths and octaves, in which both voices skip, can occur even between the outer voices, when the progression of the harmony is from one position to another of the same chord, or from an inversion to its fundamental, or *vice versa*, thus:

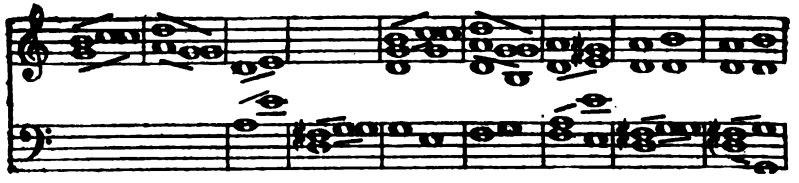


Second: Concealed octaves, in which one voice moves only one degree *cannot* occur, if the voice thus moving contains the discord of the *seventh* and its *resolution*, thus:




It will be seen that the fault in the above example will always be avoided by following the first of the Three Primary Rules.

CONCEALED UNISONS.

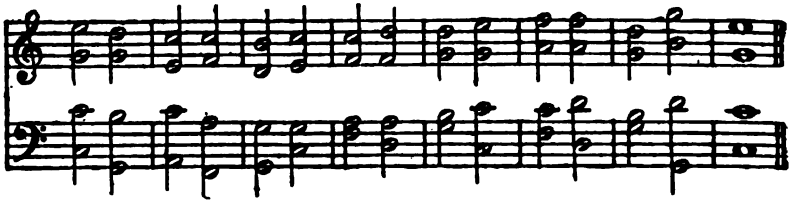


These are of the same nature as *concealed octaves*, but with worse effect, and entirely inadmissible between soprano, alto and tenor. Between tenor and bass, they are less objectionable, but *contrary motion into the octave* is usually preferable.

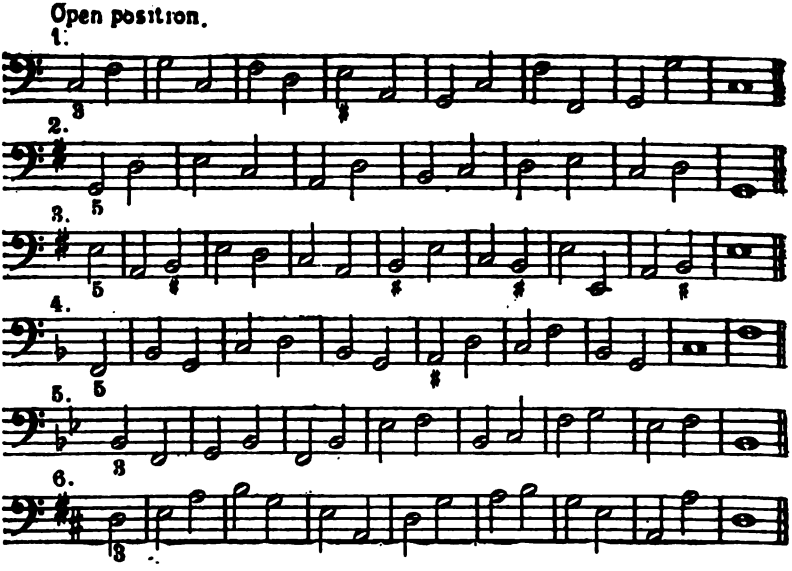
The above points concerning *concealed fifths, octaves*, and *unisons* need to be thoroughly understood and borne in mind in writing all future execises. *Conscious effort will ultimately result in unconscious compliance with all rules.*

## Secondary Common Chords.

### Illustration.

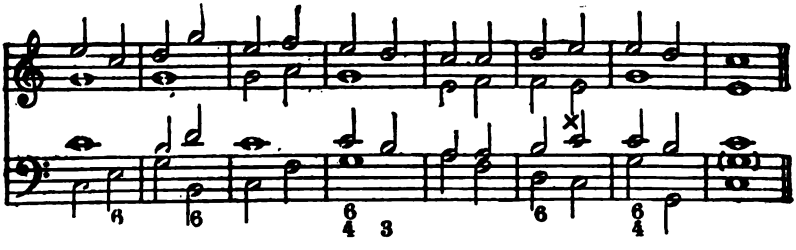


### Exercises.



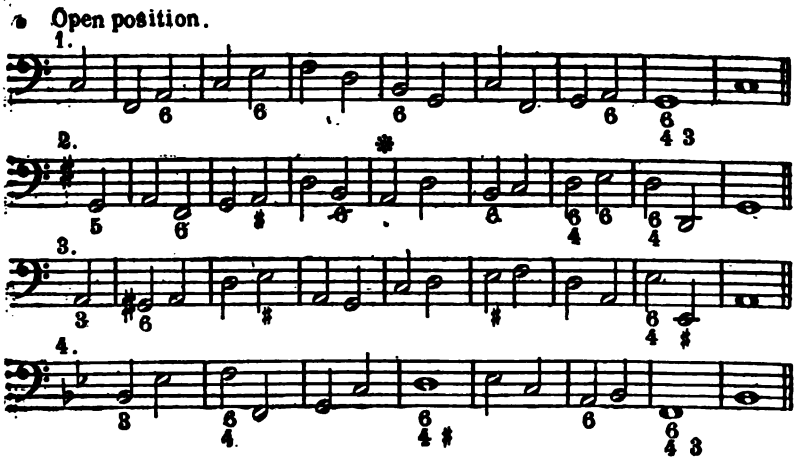

## Inversions of the Common Chord.

### Illustration.



An incomplete chord (as in the 6th measure) can be allowed when a much smoother progression of the voices is thereby attained. (Similarly in exercise (2) at *.)

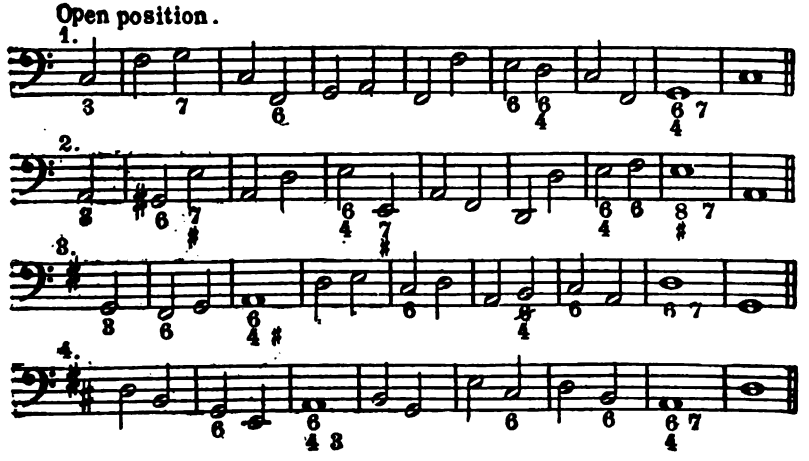
Exercises.




## The Dominant-Seventh Chord.

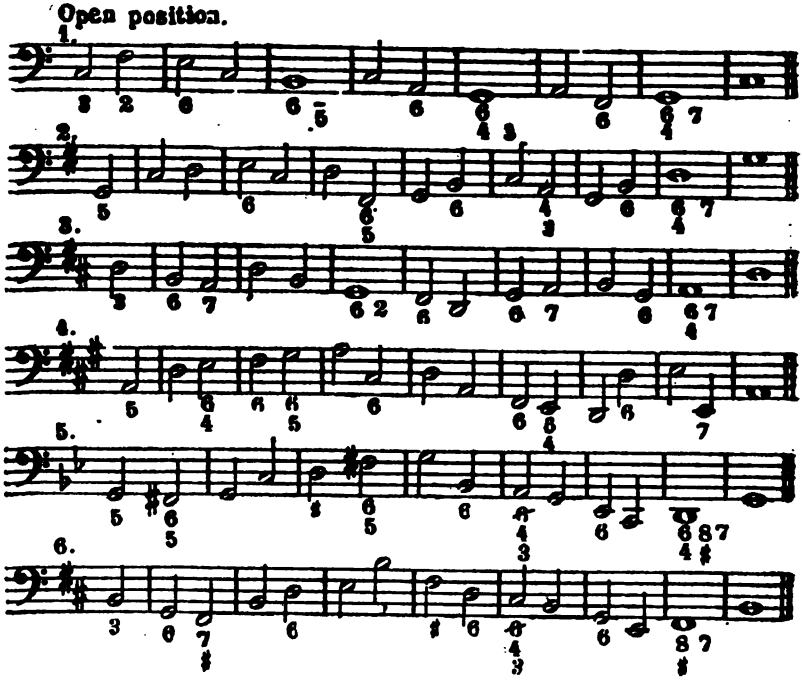
No further illustration of open position is necessary.

Exercises.



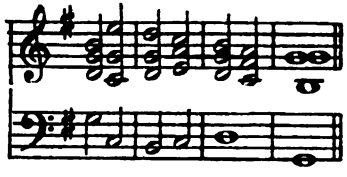
INVERSIONS OF DOMINANT-SEVENTH.

Exercises.

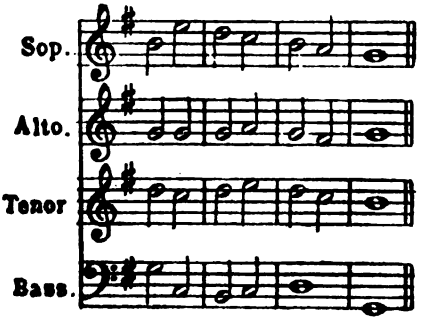



WRITING IN SCORE.

A composition is said to be written "in score" when each voice or part is written on a separate staff. The score may contain as many staves as there are voices performing simultaneously, even up to twenty or more, as in an elaborate orchestral composition. Writing "in score" has nothing to do with close or open position. Each staff must have its proper clef prefixed. It is customary in this country to use the same clef for tenor as for soprano, with the understanding that as used for the tenor, the pitch is an octave lower than as used for soprano. Accordingly the following



when written "in score" would appear thus:

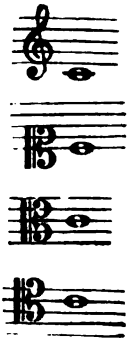


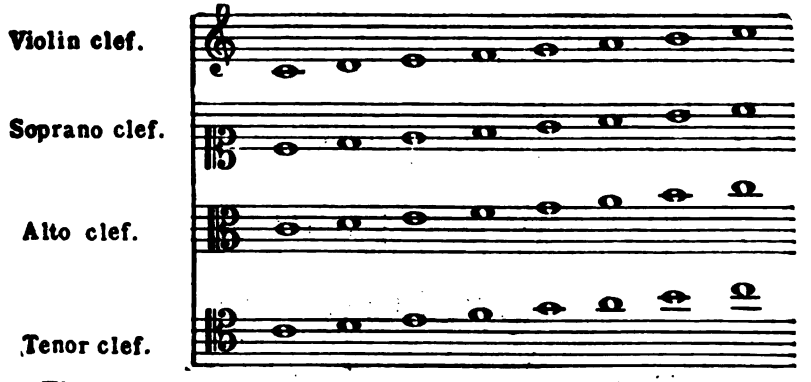

The clef in general use for soprano, alto and tenor, as above, is really the violin clef. In Germany, these three voices are still written to some extent, on different clefs, belonging specifically to soprano, alto and tenor, in each of which C has a different location. These old clefs, once in general use, are now rarely employed in vocal music, although the alto clef is constantly used for the viola, and the tenor clef sometimes for the violoncello, in orchestral music. Thorough musicianship requires familiarity with the three old clefs, but as the large majority of Harmony students do not carry their studies far enough to require this knowledge, it is not advisable to impose upon all the labor of learning them.

For the sake of the few who will need the information, the following explanation of the old clefs is given, and it is advised that prospective composers should become familiar with them by adopting their use, to some extent, in future exercises of Harmony. This matter will be left to the discretion of the individual pupil.

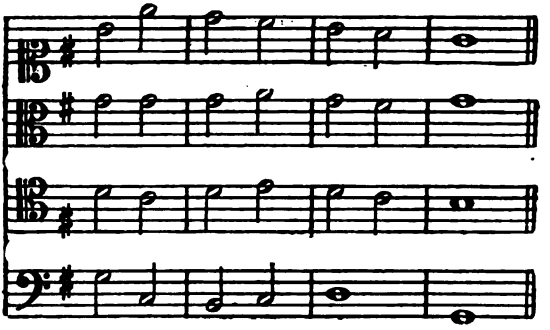
The soprano, alto and tenor clefs are given below, with the scale in each that exactly corresponds with the scale of C in the violin clef.

The same C is indicated in the four clefs, thus:



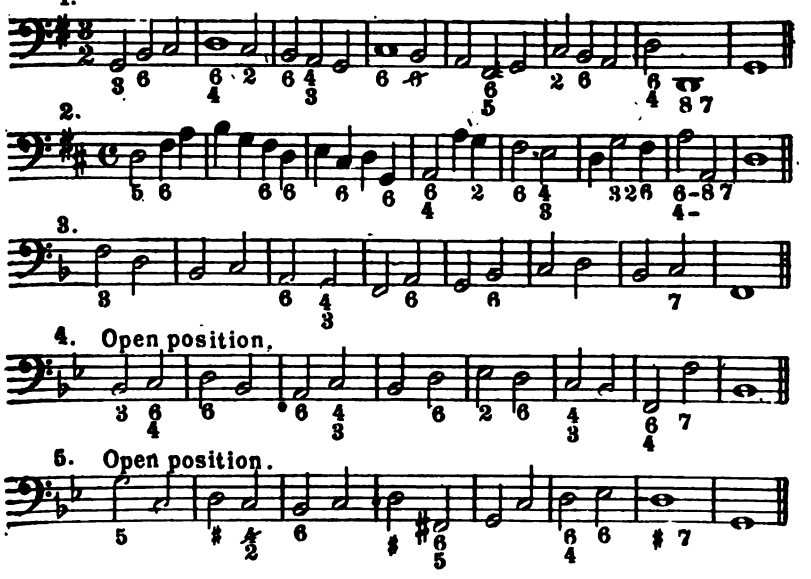



The last example, written in these clefs, appears thus:



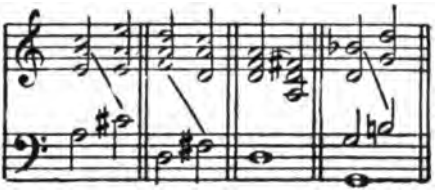
Exercises in score.

Close position.



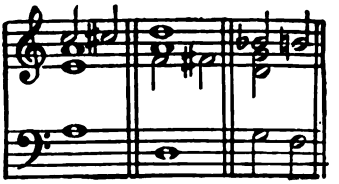
## Cross-Relation.

A very unmusical effect is often produced when any two voices, one in one chord, and the other in the next succeeding chord, take *different tones on the same degree of the scale.*

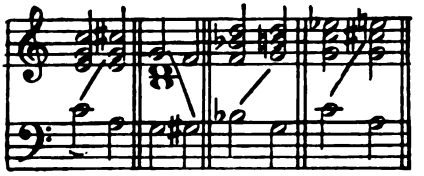


Such cases as the foregoing are inadmissible from the evident antagonism of the voices.

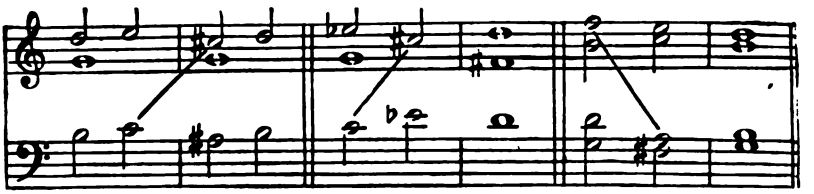
When different tones on the same degree of the scale occur in successive chords, the effect is always good if they occur *in the same voice,* thus:



When the two tones thus occur in the same voice, a cross-relation existing *at the same time in another voice* is generally not objectionable, thus:

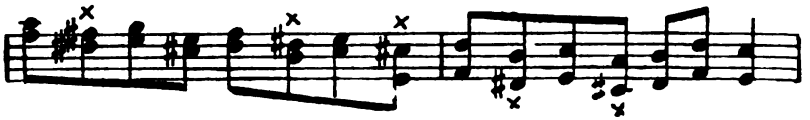


There are some cases in which both voices move one or more degrees, and still the antagonism in the cross-relation is so slight as to be unobjectionable. Such cases are therefore admissible, thus:

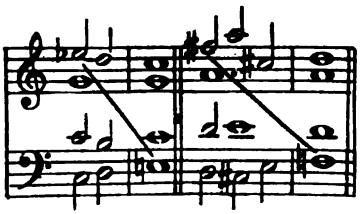


Cross-relation is not, therefore, invariably prohibited. Each case must be judged on its own merits. It is usually admissible

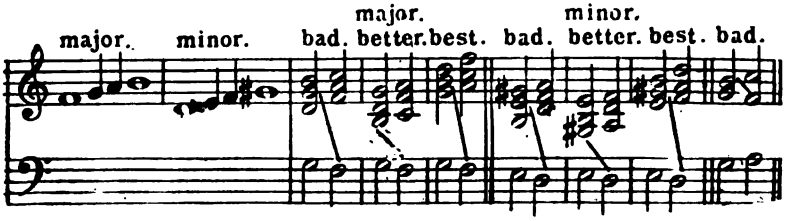
when one of the two voices takes the two tones (as explained above), and is least objectionable when the tones are of so short duration that the antagonism is least emphasized.



Occasionally an unpleasant effect is traceable to a cross-relation existing between two voices not in successive chords, but with one or more intervening chords, thus:



The only unpleasant cross-relation that can arise between any of the natural tones of the scale, is that which comes from using the *fourth* and the *seventh* of the scale (major or minor) in successive chords:




This interval, an *augmented fourth* (also called Tritone, because the sum of three whole tones), can be used in cross-relation, except where it becomes too evident, as in the examples marked "bad"; that is, in general, between the outer voices.

### Sight-Reading.

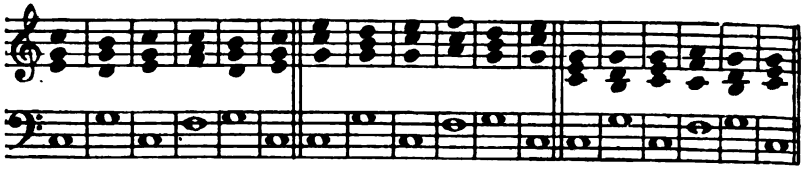
A student may have learned all the details of chord formation and connection, and at the end, be quite unable *practically* to make any use of his knowledge. The majority of Harmony students, after two years' study, *cannot sit down at the piano and properly connect half a dozen simple chords.* This is the result of that same separation of theory and practice that has largely prevailed hitherto in the study of a foreign language, wherein the pupil, after months and even years of study, cannot *speak* the simplest sentences, although he has become fully initiated into all the mysteries of declension, conjugation and syntax.

The Harmony student will see the chords in a new light when, with the bass given, he *plays* the harmonies, according to the rules already familiar to him, without first writing them. This process gives in a short time a practical fluency which years of mere exercise-writing can never afford.

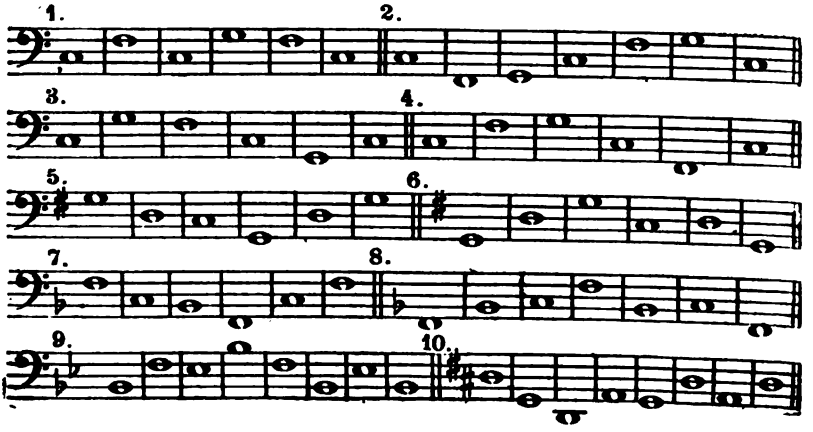
We will call this process *improvising the harmony,* or sight-reading, being, as it is, the first step in the art of true improvisation, i. e., with no bass being prescribed. Exercises of this sort, beginning with the very simplest, will from this point on be interspersed with the usual work of the student, and it is urged upon the pupil not to forego the advantage to be derived therefrom. Even if he aspire to be only a harmonist, and not a composer, this practical use of chords will be of incalculable benefit.

The procedure in the use of these exercises is as follows: Play the first bass note and the three other tones of the chord, with the *octave, third* or *fifth* in soprano, according to the figure, then determine the letters of the next chord, moving the voices according to the rules in writing, *being governed mainly by the Three Primary Rules.* With patience and care the pupil will at length be able to improvise with the same correctness with which he would write. Avoid placing the soprano *above the staff,* as the effect of the harmony is shrill and disagreeable when it lies so high. (In the first set of exercises let each be played in *three positions of* the *first chord,* i. e., with *octave,* then *third,* then *fifth,* in soprano, as in illustration.)

ILLUSTRATION.



SIGHT-READING.



(The teacher should require the pupil to play these exercises at the lesson. They should be played slowly and *practiced sufficiently* to insure their being played *smoothly* and *accurately*. For the present they are to be played in *close position*.)

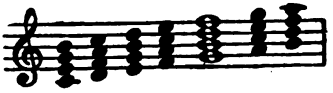
SUMMARY.

Close position:—Open position:—Boundary line between the two:—Allowable interval between adjacent voices:—Proper and improper succession of perfect and diminished fifths:—Definition of concealed fifths and octaves:—Difficulty of rules in the matter:—Explanation of bad effect:—Objection to the explanation:—When more and when less conspicuous:—Rule concerning them:—Best method to avoid them:—Two exceptions to rule:—Concealed unisons when allowed:—Writing in score:—How tenor is written:—Cross-relation:—When admissible.

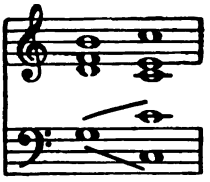
## CHAPTER VIII.

## SECONDARY SEVENTH-CHORDS.

All the seventh-chords in the scale, excepting the *dominant-seventh*, are called secondary seventh-chords. The reason for this will appear later.



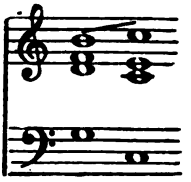
One of the commonest uses of the dominant-seventh is in connection with the tonic chord:



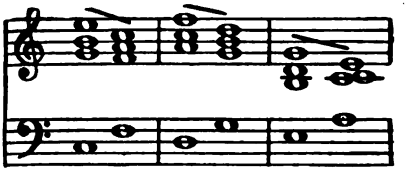
In this formula the bass ascends a fourth or descends a fifth, and the progression of the other voices has already become familar to the pupil. On account of this familiarity, the *secondary* seventh-chords are at first made to progress similarly, although it will be found in a subsequent chapter that we are by no means confined to this progression. The tendency of the *seventh* in *all* seventh-chords

is *invariably downward*, even though the seventh of the chord be the *leading-tone of* the scale:

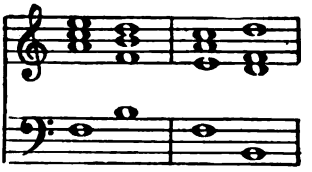
In the *dominant-seventh* chord, the *third* is the leading-tone, and has a natural *upward leading*:



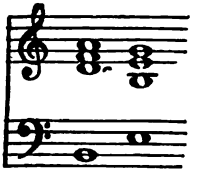
but in the *secondary* seventh chords, the *third* has no such quality, and has greater freedom in its progression:



The foregoing formula for the *resolution* of the seventh chord (i. e., in which the bass ascends a fourth or descends a fifth, and the other voices progress accordingly) is common in all the secondary seventh-chords except two, viz., that on the fourth of the scale,

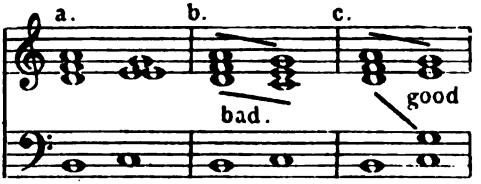


where the progression of the bass is objectionable, and also results in the unsatisfactory common chord on the seventh of the scale; and the one on the seventh of the scale,



which is not objectionable like the preceding, but is far less usual

than that progression in which the bass moves *only one degree* to the tonic, thus:

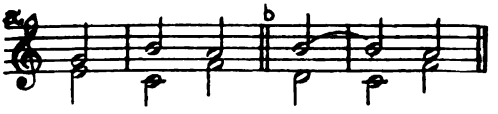



(The progression at (b) is bad, because of parallel fifths; the effect at (c) is good, notwithstanding the concealed octave, which comes out so prominently. We have also at (c) the doubling of the fifth, which is allowable in this connection.)

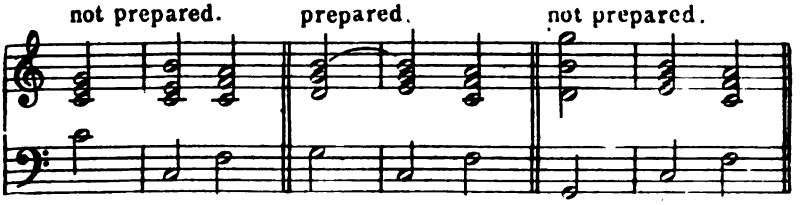
The *resolution* of the secondary seventh-chords will not be difficult after the foregoing explanations, but attention will be necessary to *feel the exact effect of each*, they being different from each other, and from the dominant-seventh, as regards their constitution of major or minor *third*, perfect or diminished *fifth*, major or minor *seventh*.

### The Preparation of the Seventh.

A discord which is altogether too harsh when it enters *abruptly*, often becomes serviceable when the ear has been somewhat *prepared* for it, whereby the harshness is in a measure softened. Thus the discord at (a) enters abruptly, and is intolerable, but at (b) the ear is prepared somewhat for the effect, and the same interval becomes allowable:




Illustrated in four-part harmony thus:




From the above examples it is seen that the ear is prepared for the discordant effect by hearing that tone which forms the discordant interval *in the preceding chord, and in the same voice.* The necessity of the tone being *in the same voice* is seen in the last example above, where the identical tone is heard, first in the alto, then in the

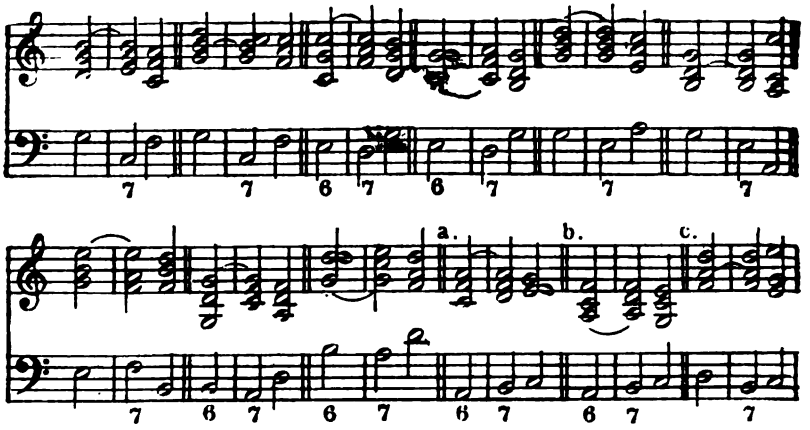
soprano, but the ear is not thereby *prepared.* (In usual phrase, the *tone* is said to be "prepared"; but to state it exactly, it is the *ear.*)

The effect of the dominant-seventh without *preparation* is satisfactory, *but the secondary sevenths in general being more harsh, need preparation.* Exactly why this distinction exists is not easy to explain, but the fact is evident, and needs no argument.

We have then the following rule:

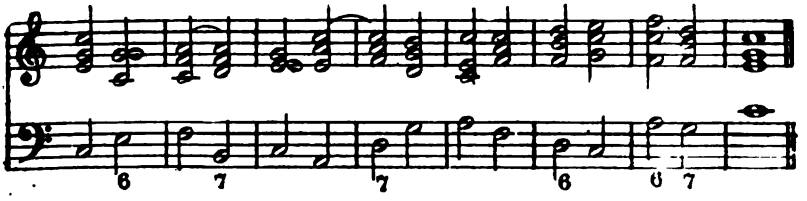
The *seventh, in secondary-seventh chords, must be prepared by appearing in the preceding chord and in the same voice.*

The following illustrates the preparation, in different voices, of the several secondary-sevenths:

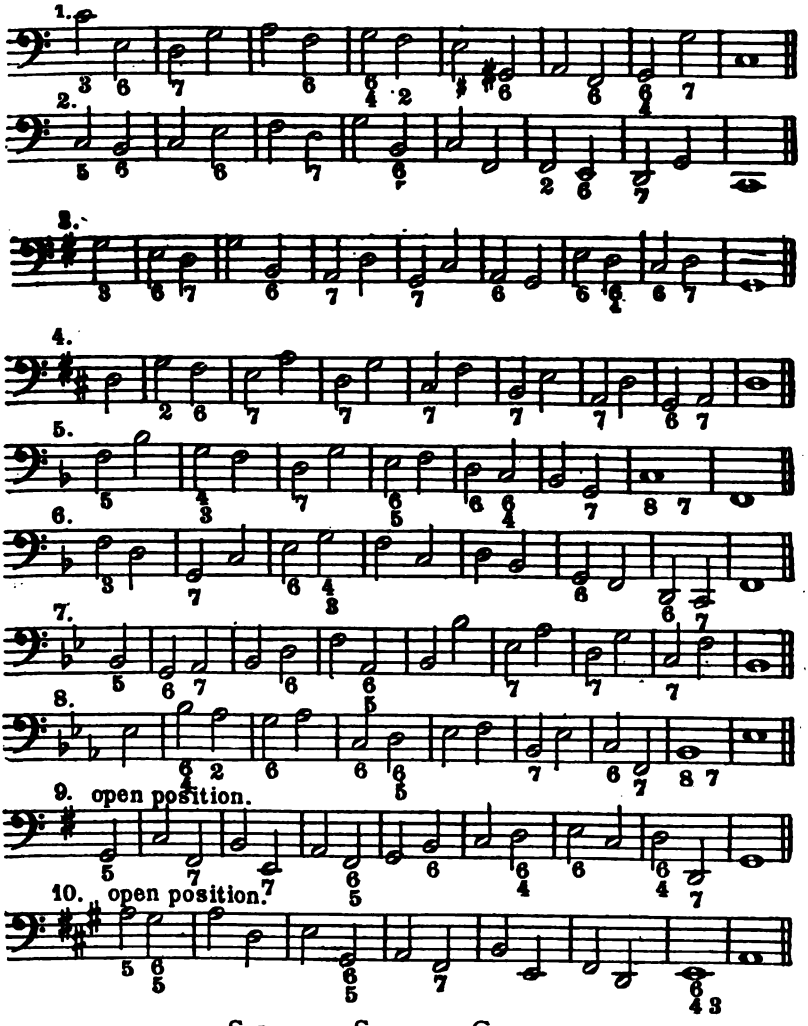



(In the seventh-chord on the seventh of the scale (as in the last example) that position is far better in which the seventh from the root is in the soprano: (a) is better than (b) or (c). There is less need of preparing this than any other of the secondary sevenths, as the effect is less harsh.

ILLUSTRATION.

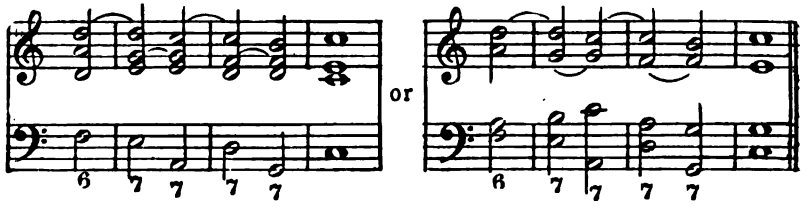


EXERCISES.




SERIES OF SEVENTH-CHORDS.

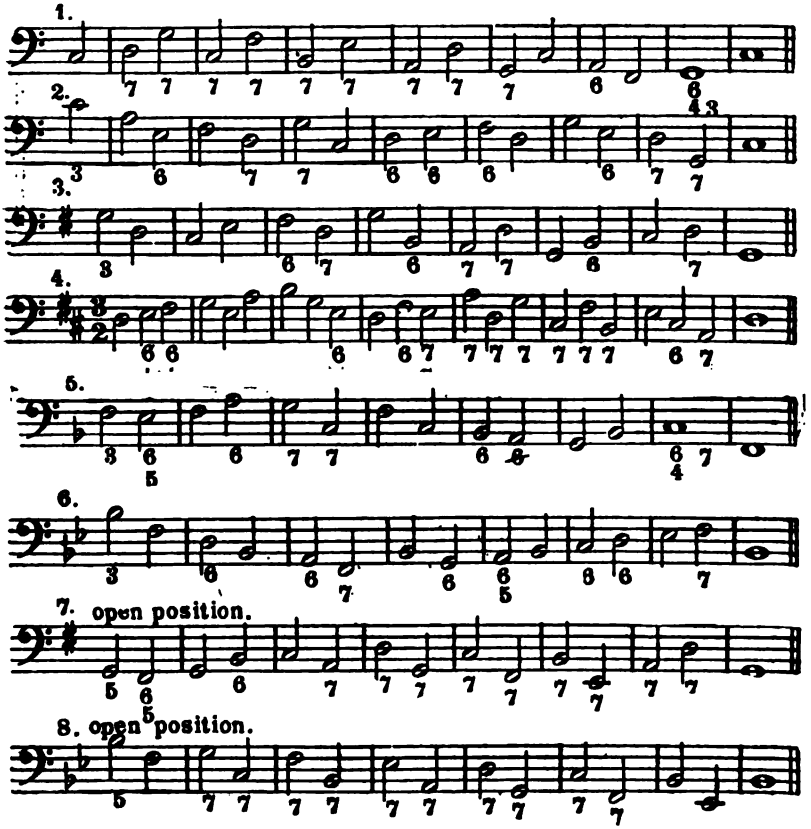
The resolution of the seventh-chord has heretofore been a common chord, on the fourth above, or fifth below. But it can as well be a seventh-chord, which in turn may be resolved by still another seventh-chord, thus:



No difficulty is involved in the substitution of a *seventh*-chord for the *common* chord, but it will be observed that the third of each *seventh*-chord (as above) becomes the *seventh* of the next chord, and therefore remains stationary; also that by adopting the simplest progression of the voices the *fifth* is *omitted in each alternate chord;* from which we derive the following rule:

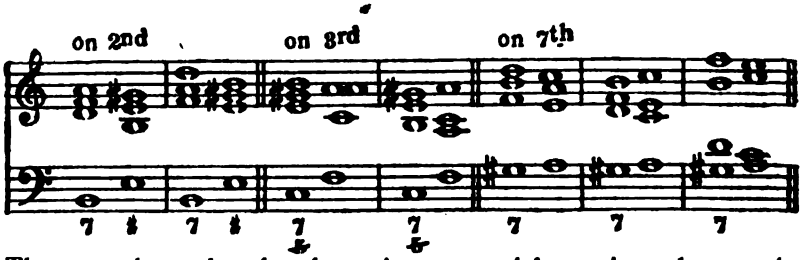
*In a succession of seventh-chords in the fundamental position omit the fifth in each alternate chord.*

EXERCISES.



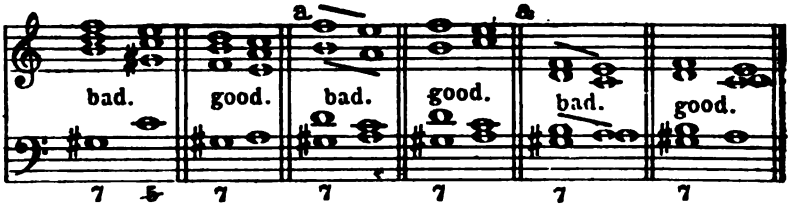

SECONDARY SEVENTH-CHORDS IN MINOR.

Their use is more limited, owing to the awkward progression involved through the raised 7th (G# in A minor). Three are serviceable, on the 2nd, 3rd and 7th of the scale.



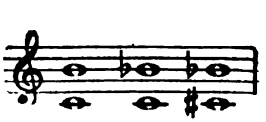

Those on the 2nd and 3rd require no special mention; that on the 7th is a new and important chord, known as

THE CHORD OF THE DIMINISHED SEVENTH.



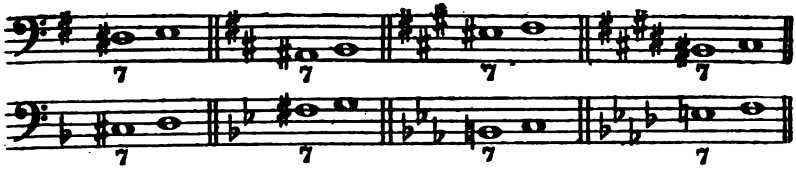

The usual progression (into the chord on the fourth above (G#-C) is impossible, as the progression of the bass is not allowable, and the chord on the third of the minor scale (with an augmented fifth) is not satisfactory. The progression of the bass is therefore *one degree upward,* (as in the seventh-chord on the seventh of the major scale), and the *third* must not be allowed to move in fifths with the seventh as at (a) above.

*The Diminished Seventh,* the softest of all sevenths, *needs no preparation.* There are three sizes of the seventh-interval; *major, minor and diminished,*



and they are harsh in proportion to their size.

Write the following diminished seventh-chords, in different positions, also in close and open position, and resolve properly;



The seventh-chords on the 1st, 4th and 6th of the scale involve progressions which are either utterly impracticable, or rarely serviceable, thus:

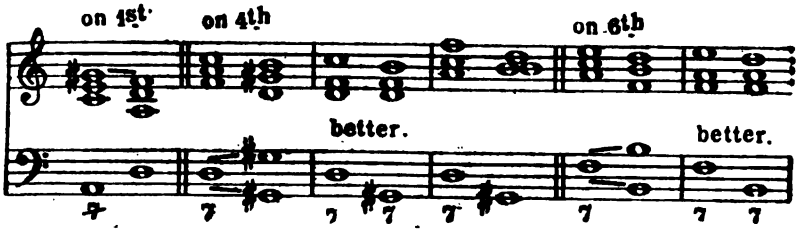
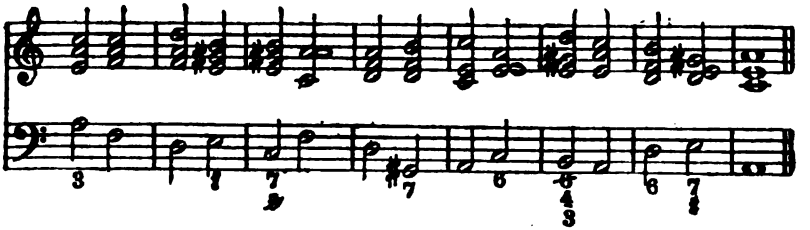
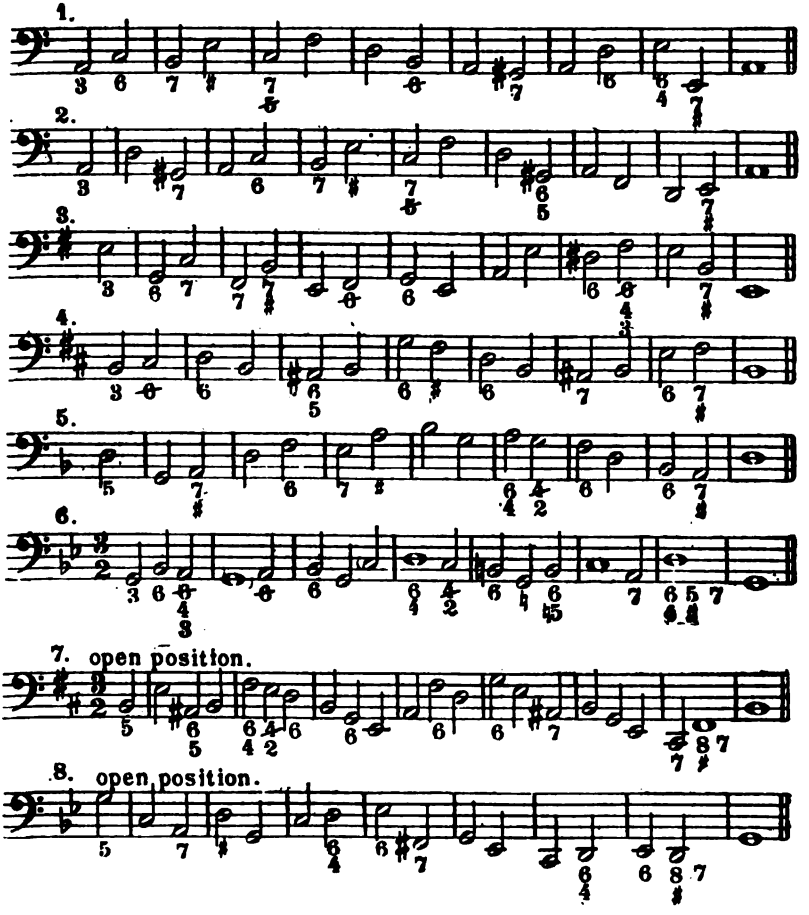


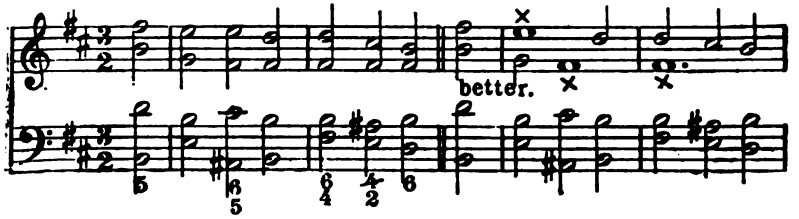

ILLUSTRATION.



EXERCISES.

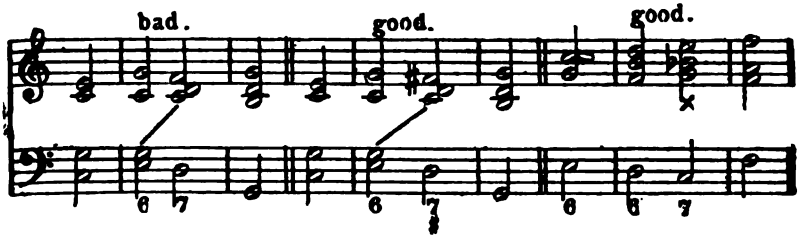


A more musicianly effect is obtained by *holding over* the tone, instead of repeating it, when it belongs to the same voice in two or more successive chords. This is illustrated in the first two measures of the first of the above exercises in open position.



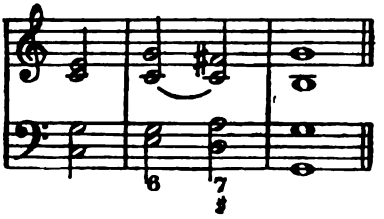

TWO EXCEPTIONS TO THE RULE THAT SECONDARY-SEVENTHS MUST BE PREPARED.

First exception: When the secondary-seventh chord, *by the use of accidentals*, takes the form of a dominant-seventh-chord; i. e., has a *major third, perfect fifth* and *minor seventh;* thus:

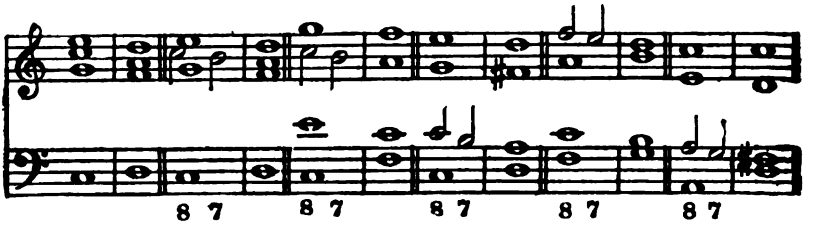



Every chord that is altered in this way is, in fact, a dominant-seventh chord of *some scale,* but as used above is only a secondary-seventh chord *altered to that form,* there being no actual change of scale.

Such a free entrance of the seventh as the above will however be comparatively infrequent, as the simplest harmonic progression will usually involve preparation, thus:

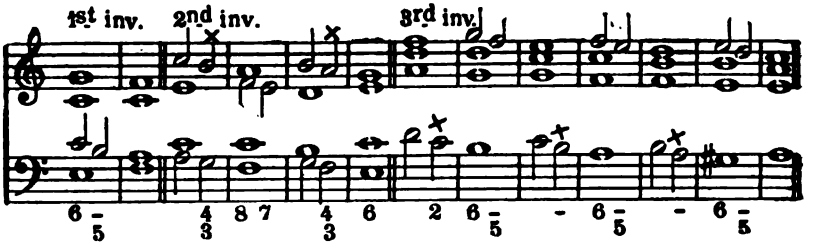


*Second exception*: When one of the voices *moves diatonically through the seventh,* in the *unaccented part of the measure,* thus:

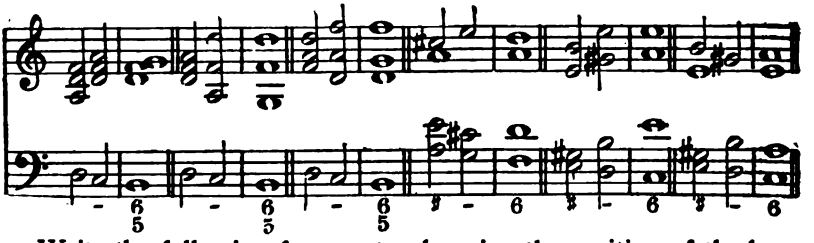



(Note. The matter of *accent* is fully explained in Chapter XVI.)

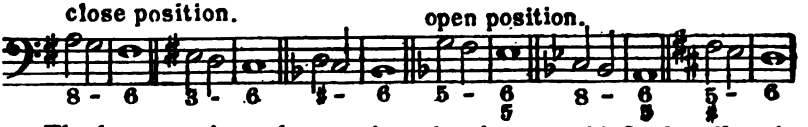
This use of the *seventh* will be referred to again under the subject of *passing tones,* (Chap. XV.) and may be designated as the *passing seventh.* It is found frequently in the *inversions,* as well as in the fundamental form, thus:




As the above example shows, when the *passing seventh* occurs in the bass, it results in a chord of the second, and can be so figured; but it is usual in such case simply to put a dash (—) under the seventh, which always means that *the other voices are to continue the harmony of the previous chord.* This does not mean that the other voices must remain immovable, but if they move, it must be *to tones of the same harmony,* thus:



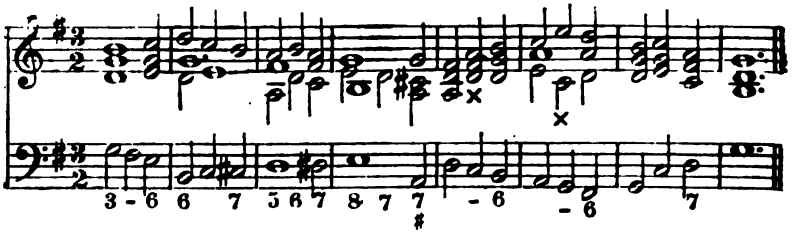
Write the following fragments, changing the position of the harmony in the second chord of each:



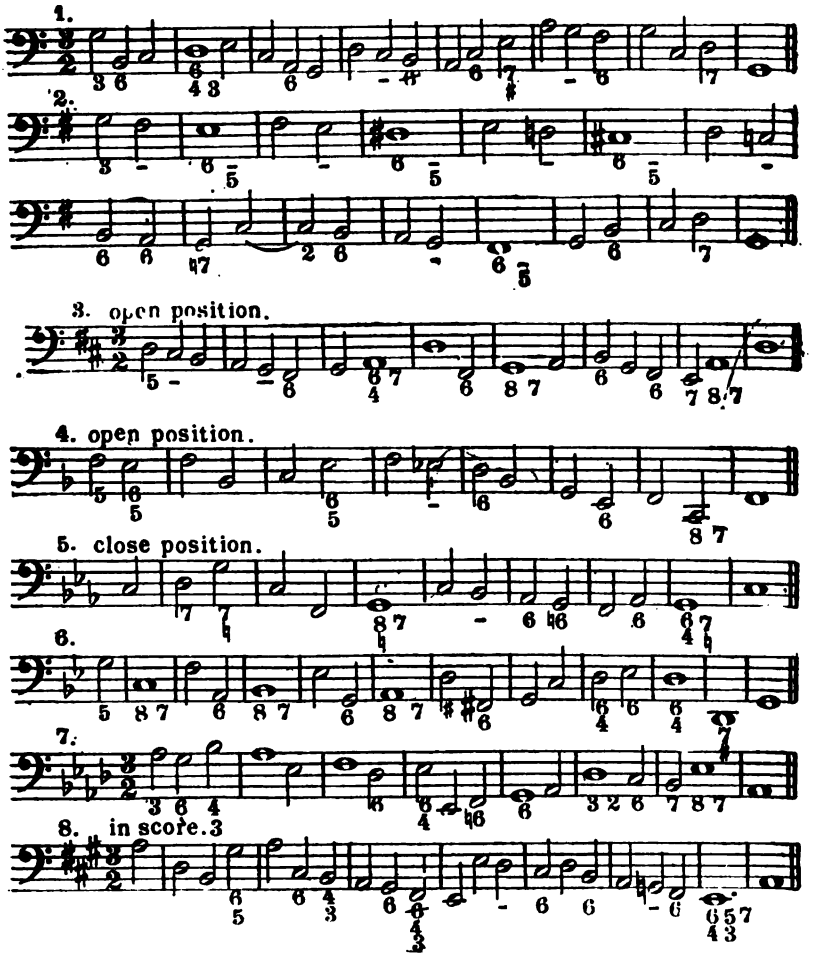

The harmony in such cases is to be changed chiefly for the sake of securing a better location of the voices. or to avoid monotony.

The pupil must use his own judgment as to whether the voices should move, or sustain the tones of the previous chord. Parallel motion of all voices is here allowable, as on page 56.

ILLUSTRATION.

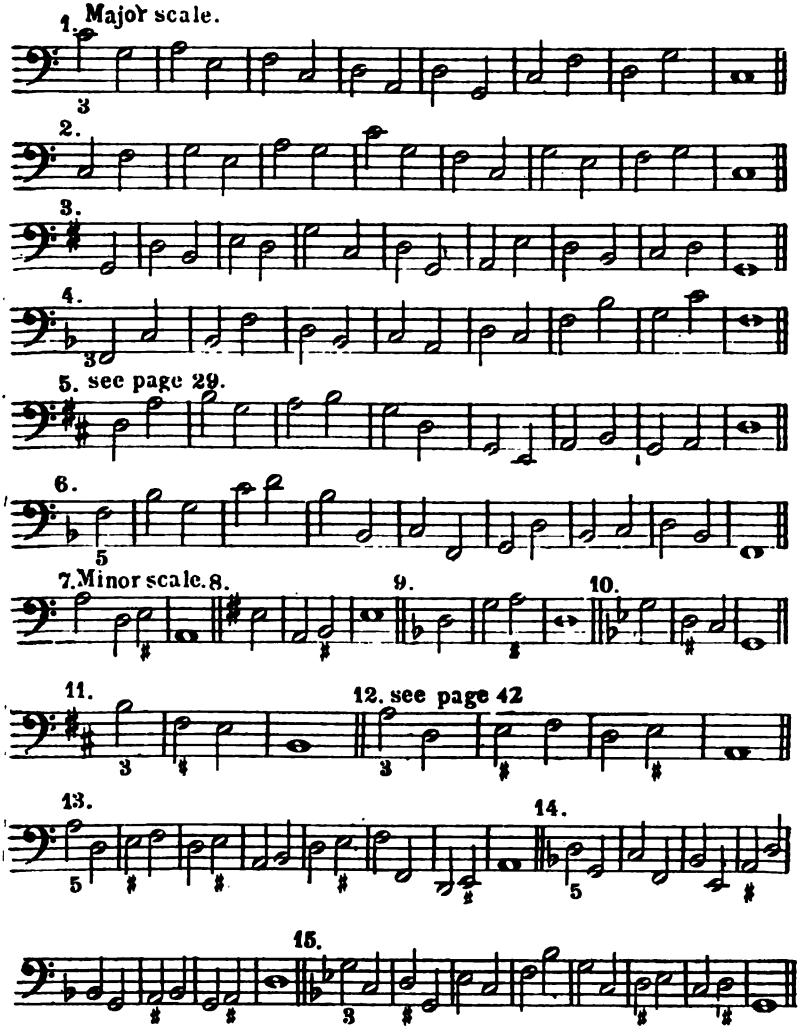


EXERCISES.



SIGHT-READING.

Primary and secondary common chords.




Chords and their connections are not *mastered* till they can be fluently improvised in the above manner. Effort in this direction will be found to repay far better than the mere *writing*. The minor scale presents peculiar difficulties, and a review of Chapter III is advisable.

SUMMARY.

Secondary-seventh-chords:—The usual progression of seventh-chord on 7th degree of scale:—How the discord of the seventh is

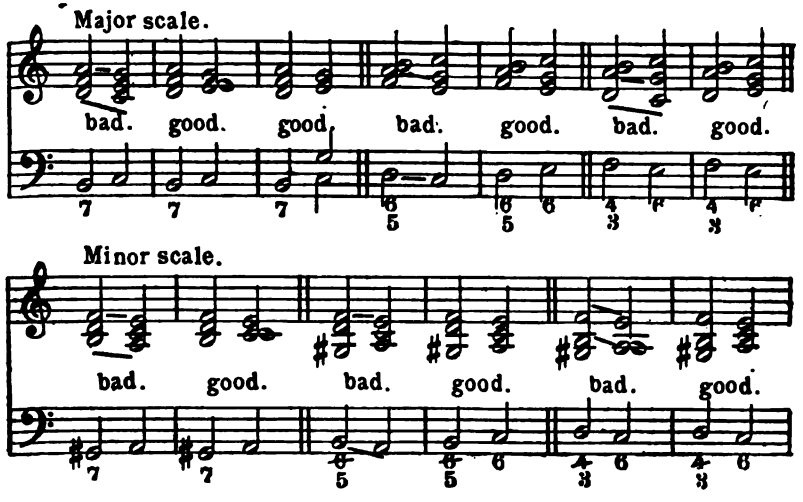
"prepared":—Need of preparation in secondary-seventh chords:—Procedure in a series of seventh-chords:—Use of secondary-seventh chords in minor scale:—Peculiarity of seventh-chord on 7th degree of minor scale:—How it differs from others in regard to progression and preparation:—Three sizes of the seventh-interval, and their degrees of harshness:—First exception to the rule of preparing secondary sevenths:—What is the "dominant-seventh form:"—Second exception to the rule of preparation:—Meaning of a dash under bass note:—Changing position of upper voices, and parallel motion in all voices, when "passing seventh" occurs in bass.

## CHAPTER IX.

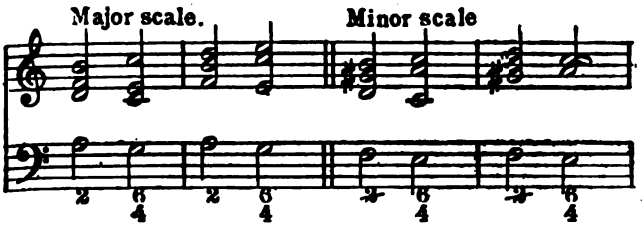
### The Inversions of the Secondary-Seventh Chords.

These inversions are formed in precisely the same way as those of the dominant-seventh, and need no special explanation, as the several elements have the same progressions as in the fundamental position.

In the seventh-chord on the *seventh of the scale,* both *major* and *minor,* in which the root has a progression of one degree upward (to the Tonic), care must be taken to avoid *parallel fifths* in the *first* and *second* inversions, just as in the fundamental position.

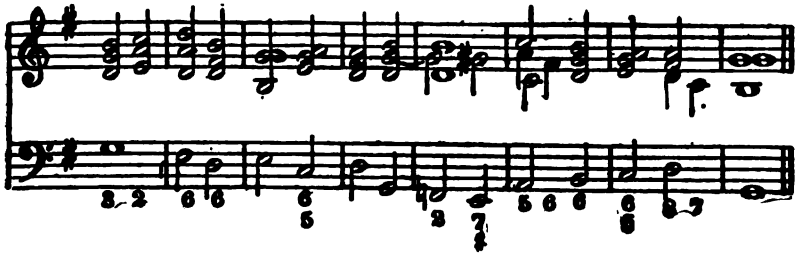


The *third inversion* of each of these chords

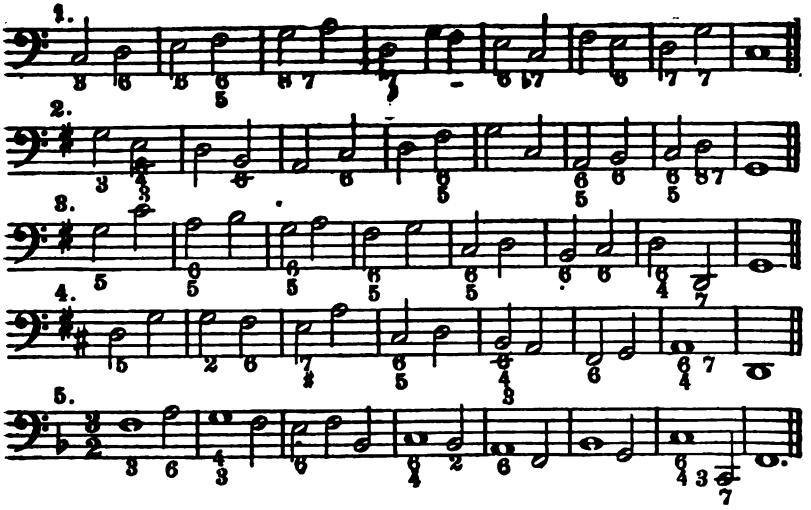


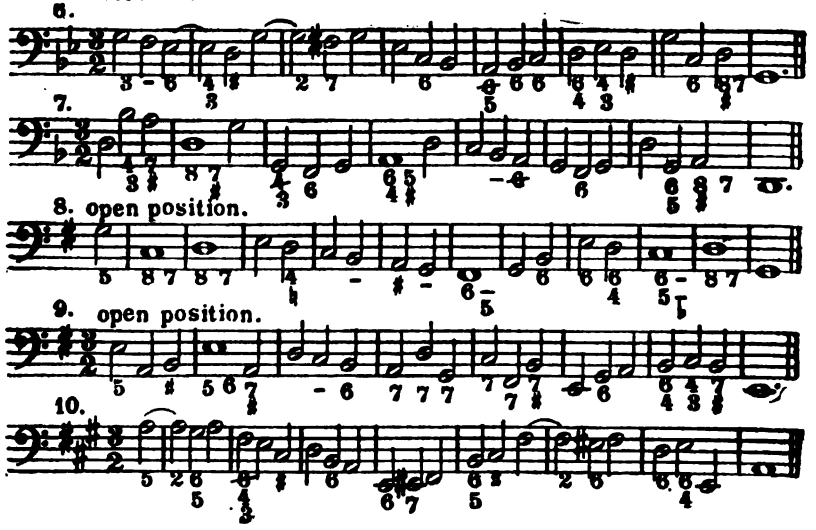

can seldom be used with the resolution into the $\frac{6}{4}$ chord, and it is to be observed in general, regarding inversions of the secondary-seventh chords, that they are not as uniformly effective as those of the dominant-seventh chord, and the position of the three upper voices needs to be chosen more carefully. In reality, a large proportion of all secondary-seventh chords, fundamental and in inversion, that are practically used, are altered into the "dominant-seventh form."

ILLUSTRATION.



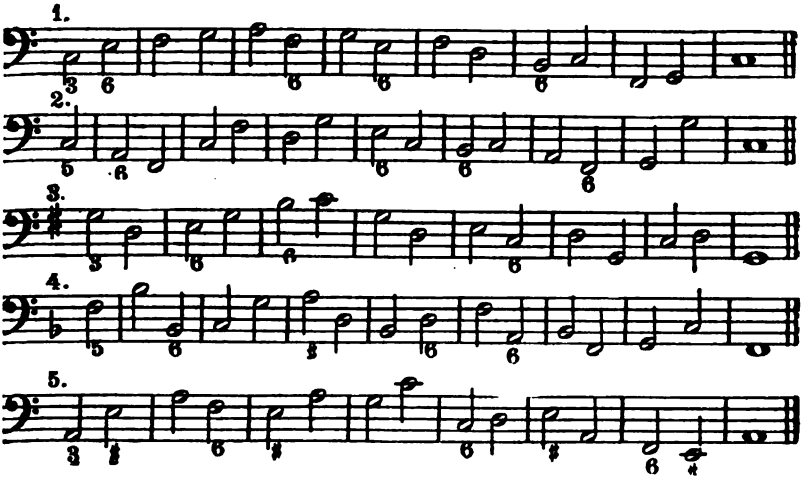
EXERCISES.



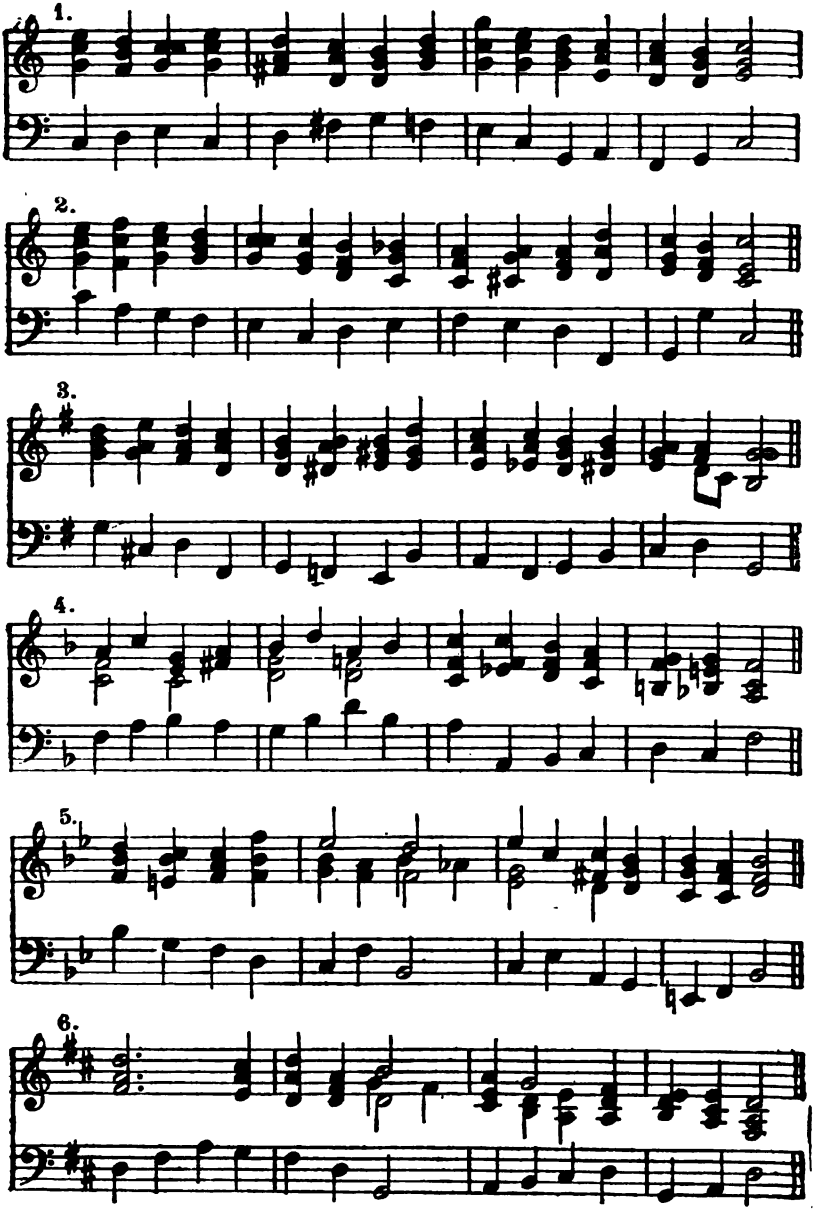



SIGHT-READING.

With first inversion of common chord.




Let the basses of the following exercise be correctly figured, so as to express *all that is involved in the harmony of each chord.* This is just the reverse of all the foregoing exercises, in which the figured bass is given, from which the harmony is to be determined.




It would be well for the teacher to write additional exercises like the foregoing, to be figured by the pupil.

SUMMARY.

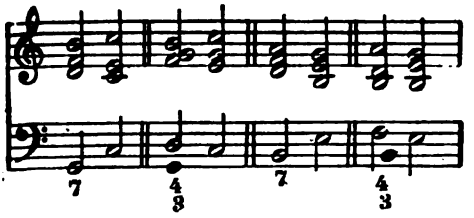
Formation and progression of inversions of secondary-seventh chords:—Caution in progression from seventh chord on 7th degree

of major or minor scale, in fundamental or inverted form:—Ineffectiveness of most secondary-seventh chord inversions, and need of care in position of upper voices:—Frequency of "dominant-seventh form" in secondary-seventh chords.

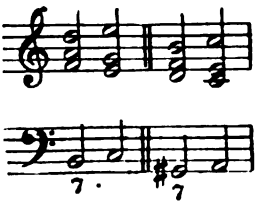
## CHAPTER X.

### Seventh-Chords Followed by Various Resolving Chords.

The essential thing in the progression from a *seventh-chord* is that the *seventh descend one degree.* The resolving chord heretofore used has always been the common chord (or *seventh-chord*), founded on the fourth degree above, or the fifth degree below the root of the seventh-chord to be resolved, thus:




The one exception thus far has been the seventh-chord on the seventh of the scale, major and minor, the root of which moved one degree upward.




But *any* chord, having a close harmonic connection, and allowing of the proper resolution of the seventh, may also be used, whatever the root-progressions.

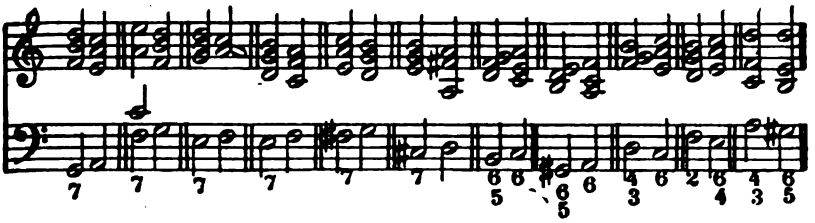
The various chords that can follow the seventh-chord may be divided into two classes:

1st, those in which the bass moves:

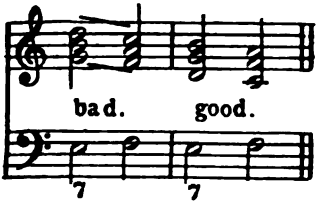
2nd, those in which the bass is stationary.

FIRST CLASS.

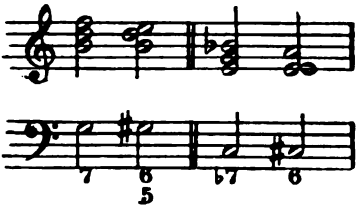
(a) *Bass moving one degree*: (major or minor second).



It often happens that a progression that is inadmissible in one position of the upper voices is allowable in another position, thus:



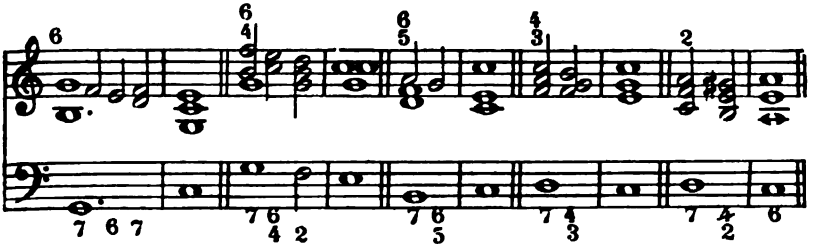

(b) *Bass ascending an augmented Prime.*



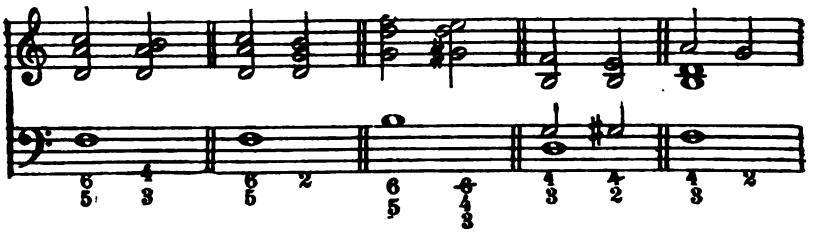
SECOND CLASS.

Bass stationary.

With stationary bass, the resolving chord can take the form of any one of the five chord-inversions, viz., 6, $\frac{6}{4}$, $\frac{6}{5}$, $\frac{4}{3}$, 2, thus:

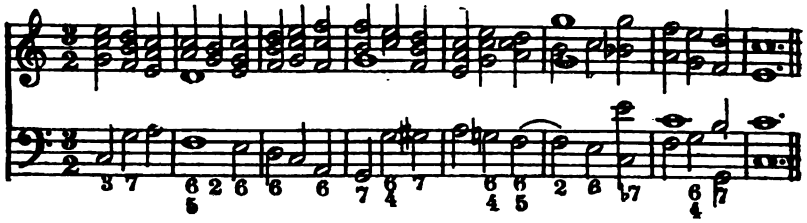


With stationary bass, the seventh-chord, *when itself an inversion*, most naturally resolves into a higher inversion of another seventh-chord, thus:

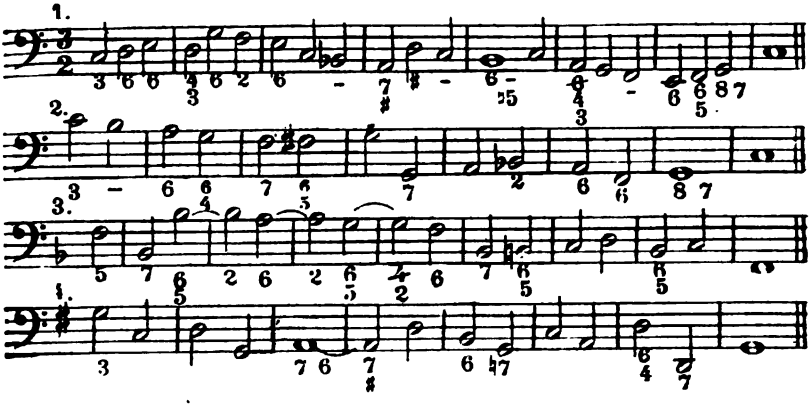


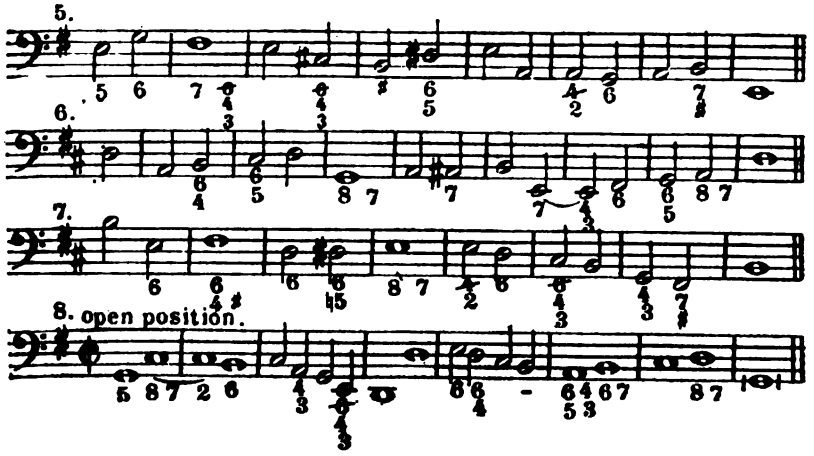
The form of resolution used in the preceding chapter may be called the fundamental, as it is certainly the more conventional resolution. The several resolutions offered in the present chapter afford a great and pleasing variety in the harmonic coloring; but the particular situation must determine the fitness of each and all of them. As the harmonies become richer, and the chord-connections more intricate, it will not be amiss again to remind the pupil that his success depends *more and more* upon his having a *clear sense of each harmony, and of its flow into the following.* If any example or exercise cannot be thus *heard in the mind,* it should be played over, until the pupil, *without playing, can recall the whole effect.*

ILLUSTRATION.



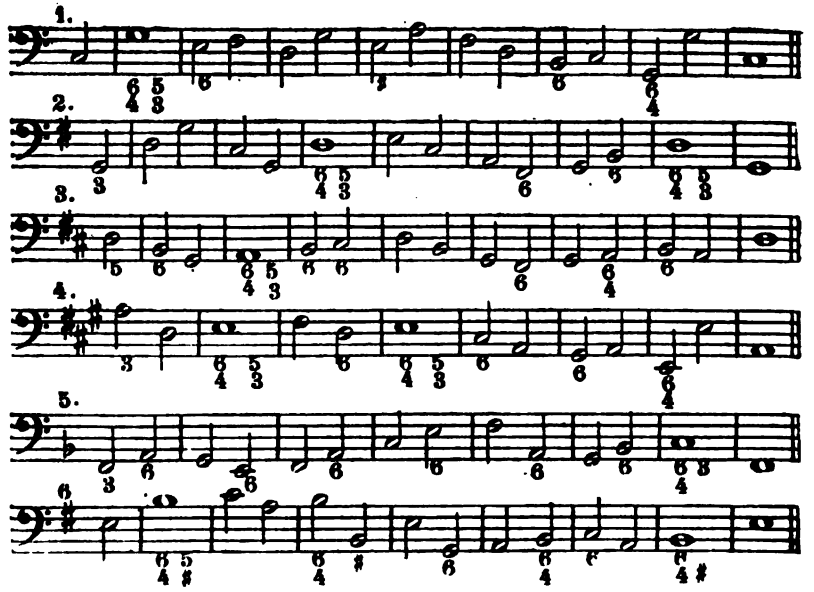
EXERCISES.






SIGHT-READING.

With second inversion of common chord.




It is a very interesting and profitable exercise for one pupil to *play* an exercise slowly, and another, by listening, to determine and name the successive chords; indicating them either by the letter of the root, or its degree in the scale. When it is impracticable for two pupils to practice this together, the teacher should make it a part of the lesson-exercise.

The very simplest exercises (involving only the primary common chords) should be first used in this way, and other chords added by degrees.

SUMMARY.

The essential thing in progression from a seventh-chord:—The resolving chord heretofore used, with one exception:—What other chords can be used to follow a seventh:—How classified.

## CHAPTER XI.

### EXCEPTIONAL MODIFICATIONS IN THE RESOLUTION OF THE SEVENTH.

While the fact remains that the seventh demands the degree below for its resolving tone, it is possible, without doing violence to this inherent quality and demand of the *seventh*, to introduce some modifications in the chord-progressions, which prevent the monotony of invariable uniformity.

These modifications may be classified thus:

1st. *Delaying the resolution.*

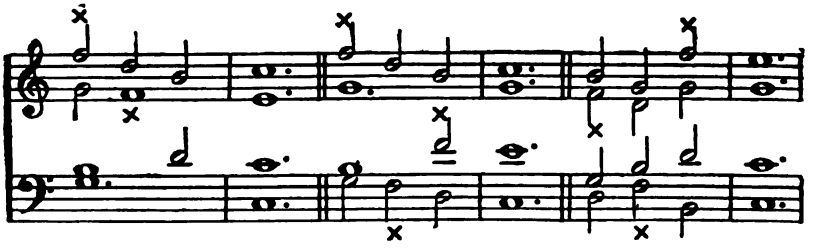
2nd. *Moving up from the seventh and resolving in an under voice.*

Each of these modifications will be variously illustrated. The pupil should carefully study the examples of the second class especially, as it is generally impossible in a figured bass to *compel* the unusual progression; in most cases it being possible so to harmonize as to avoid it entirely.

1st. *Delaying the resolution.*

This can be done in two ways:

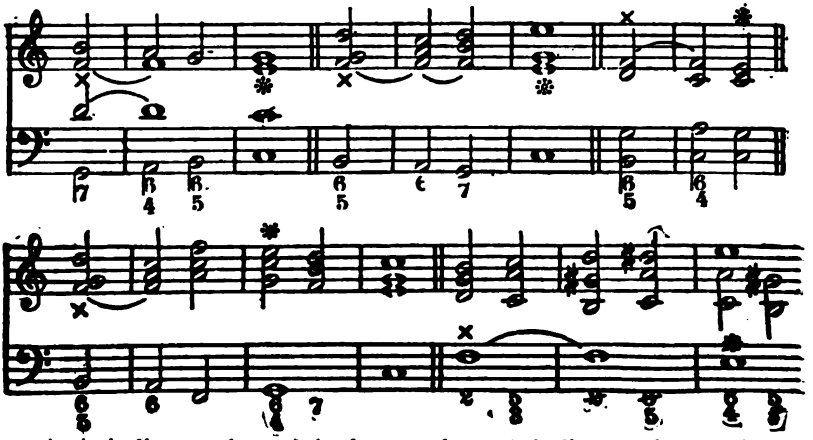
First, by moving the voices from one position of a seventh-chord to another position of the same chord, or by the use of successive inversions of the same chord, thus:



The mark x shows the transference of the seventh from one voice to another. Naturally the resolution follows in the voice that last contained the seventh.

Secondly, by so moving the other voices that the original *seventh* appears as *another interval* in one or more chords before the reso-

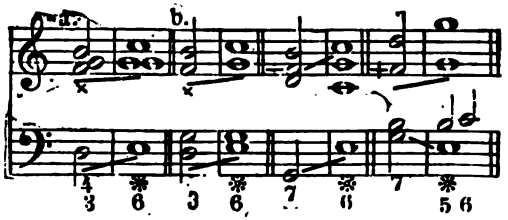
lution. The resolution may appear in the same voice as the original seventh, or, if the tone that is the original seventh be transposed, the resolution may also be, thus:



A + indicates the original seventh; a * indicates the resolving tone. Another way of delaying the resolution will be explained under Suspension.

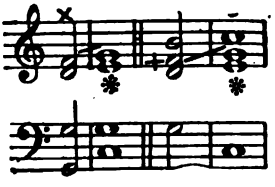
2nd. *Moving up from the seventh, and bringing the resolution into the bass.*

The bass itself can *ascend* or *descend* to the resolving tone, in the two following ways:

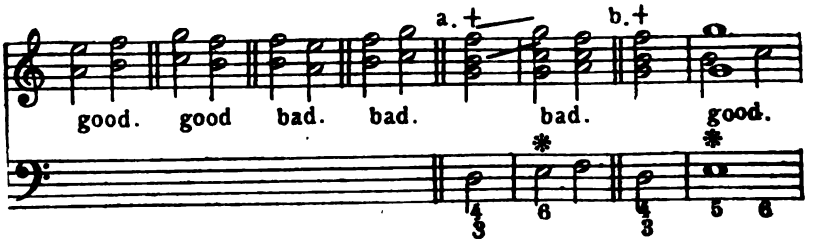



Resolving into unison, as at (a), is admissible, but is more harsh than resolving into octave, as at (b).

This substitutionary resolution in another voice can occur only in the bass, because that voice is so prominent as to give the resolution with nearly the same force. The following, with the resolution substituted in the alto or tenor, are not satisfactory.

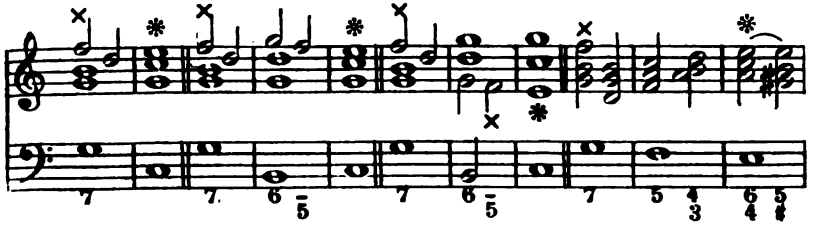


An *imperfect fifth* can follow a *perfect fifth*, but not *vice versa;* accordingly the progression at (a) is inadmissible, but correct at (b).

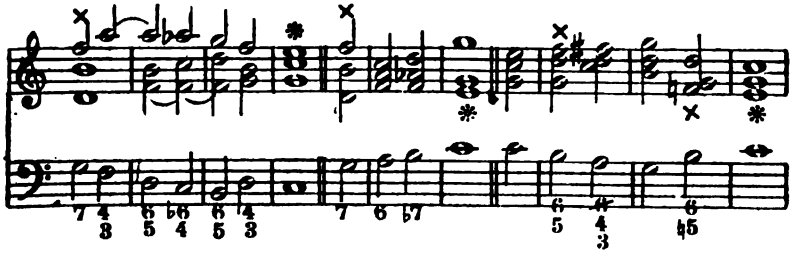



In regard to the case at (b) it should be observed that the substitutionary resolution in the bass is seldom satisfactory when the seventh has occurred in the soprano, but is quite adequate when it is in alto or tenor. The reason is, that the seventh is most conspicuous in the soprano, and the resolution must be equally emphatic by occurring in the same voice.

A voice giving the seventh of the chord may, before resolution, pass to another tone of the same harmony, and sooner or later the seventh be resolved in the same voice, or in another voice, thus:



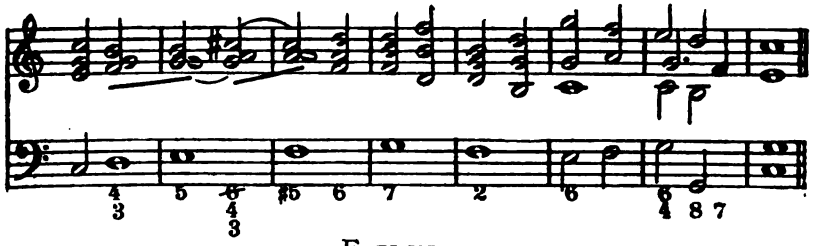
The greatest deviation from the simple and normal resolution of the seventh is that in which the voice containing the seventh moves, together with other of the voices, to an entirely different harmony; while the resolution occurs later, either in the same voice, or in another one, thus:



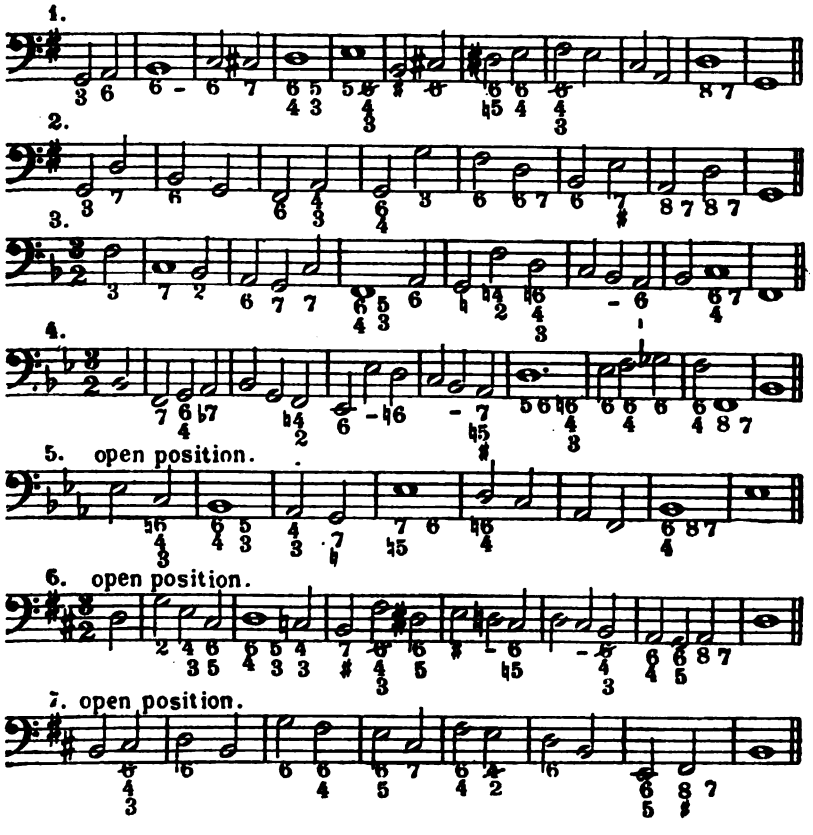
All the essential deviations from the strict and immediate resolution of the seventh are exhibited in the foregoing examples, which

should be carefully studied that they may be understood in the harmonic analysis of music, and that the pupil may himself introduce them as occasion offers. Such treatment of the seventh will ever remain exceptional, and finds its justification chiefly in the *more melodic character of the voice containing the seventh,* and in the demand for variety of effect. The following exercises afford frequent opportunity for this treatment of the seventh. Let the pupil avail himself of each opportunity, that he may gain practical familiarity with the subject.

ILLUSTRATION.



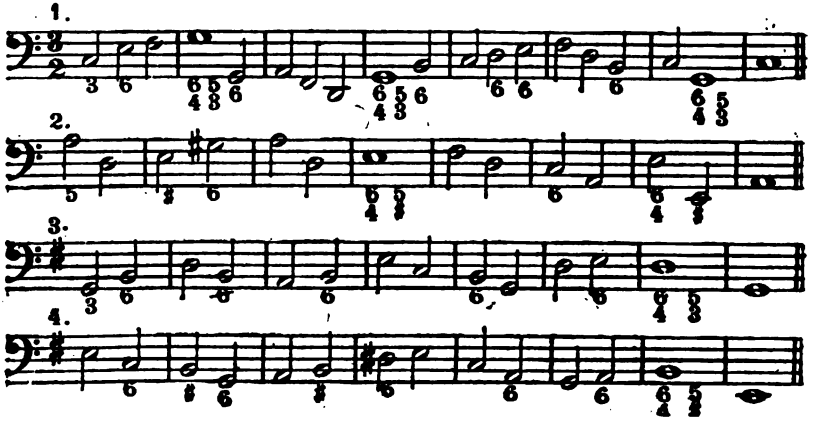
EXERCISES.



The foregoing is perhaps the hardest set of exercises thus far, and requires careful attention to introduce effectively the unusual progression of the seventh.

SIGHT-READING.

*With common chords and their inversions, major and minor.*



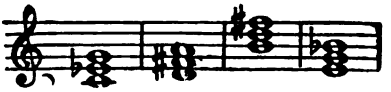

SUMMARY.

Two ways of modifying the progression from a seventh-chord:—Two ways of delaying the resolution:—In which voice only the substituted resolution can occur, and why:—Why bass is inadequate as substitute for resolution of a seventh in soprano:—This exceptional resolution of the seventh is justified by what?

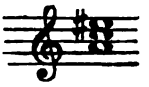
## CHAPTER XII.

### ALTERED CHORDS.

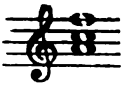
One or more notes of our two elementary chords (the common chord, and the seventh-chord) may be affected by accidentals. In many instances, such an alteration will result only in a different *variety* of the same chord, such as we are already familiar with, as changing a major chord into a minor, or *vice versa*.



In other cases, the accidental converts the chord into something *radically different*, so that the notation is faulty as expressing the intended effect; thus

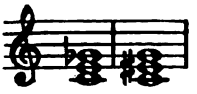


when used to express



is incorrect.

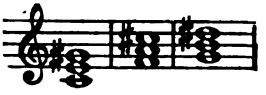
In still other cases, the accidentals so *distort* the chord as to disqualify it for a fundamental harmony; thus:



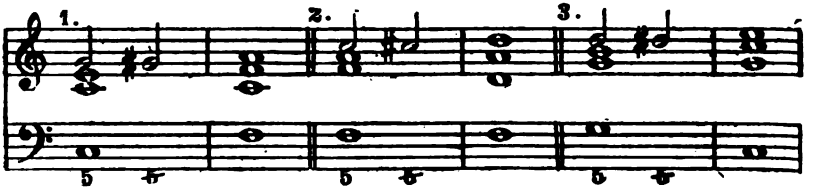
After eliminating all the alterations of fundamental harmonies, as above described, there remain *five accidentally altered forms* of chords which are characteristic and serviceable, the discussion of which will complete our treatment of fundamental harmonies.

Of the three ways above mentioned of altering chords by accidentals, the first *re-forms* the chords, the second *de-forms* them, and the third, now to be spoken of more fully, *trans-forms* them.

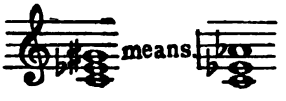
1st. The Augmented Triad.



We are already familiar with this chord, as the triad on the third of the minor scale; but it is more common and serviceable in the major scale, on the first, fourth and fifth of the scale, as above. The augmented interval is commonly introduced as a "passing note", thus:

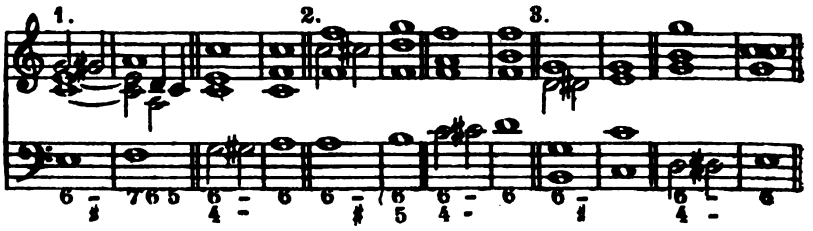



In all *minor* triads, the effect of the *augmented fifth* will be found to be like that of a *minor sixth*, hence not characteristic, thus:

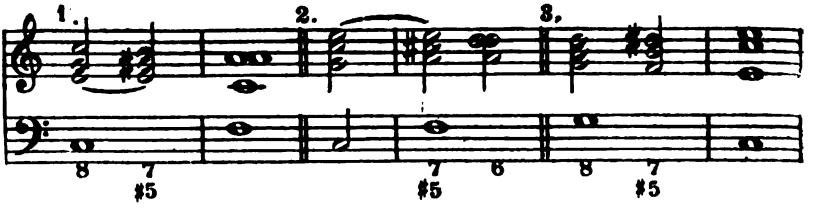


It is the fact of the *augmented* being usually preceded, as above, by the *perfect fifth* (with the elimination of what would be the "leading tone" of a minor scale) that makes this chord commonly used in the major rather than in the minor scale.

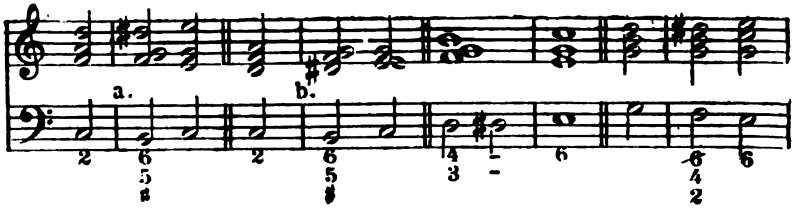
This chord can also be used in the two inversions, of which the first is the better:




By the addition of the seventh to these three augmented triads we obtain the following:

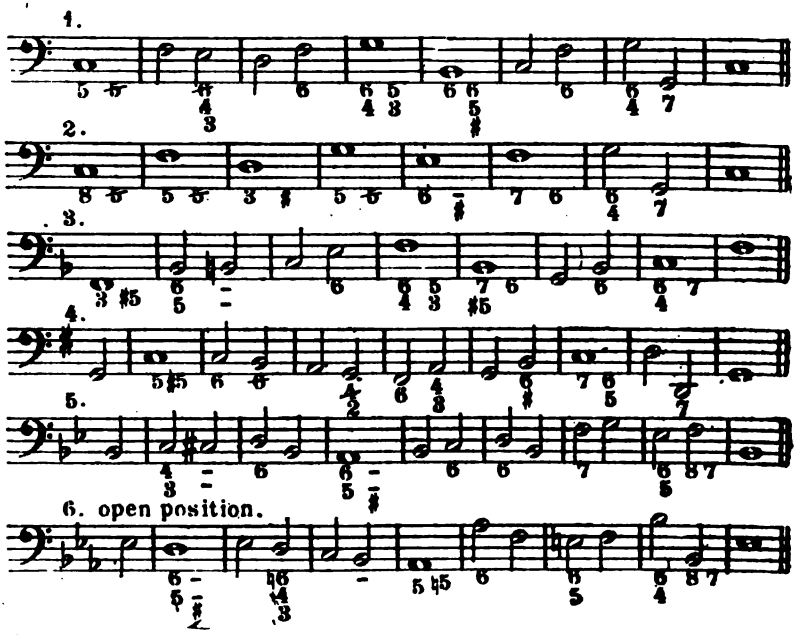



The first and second, which are secondary-seventh chords, are not effective in the inversions; but the third (the *dominant-seventh with augmented fifth*) is good in all the inversions, but best of all in the first and third.



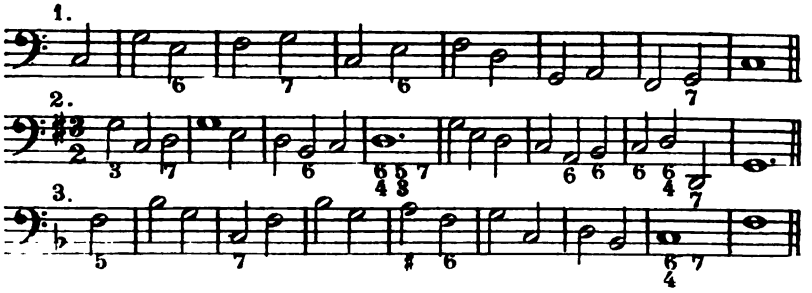

Care must always be taken that the *augmented fifth* and the *seventh* shall resolve into *octave*, as at (a), and not into *unison*, as at (b).

EXERCISES.




SIGHT-READING.

*With dominant-seventh chord.*

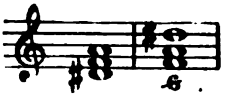



Write the three augmented triads in the keys of G, D, A, F, B♭ and E♭.

Write the dominant-seventh chord with augmented fifth in the same keys.

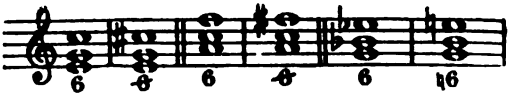
Write the three inversions of the above seventh-chords.

2nd. The Chord of the Augmented Sixth.

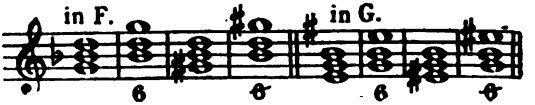


By taking any minor triad with a perfect fifth, and ***raising the root a semitone,*** we obtain a combination which is ineffective in the fundamental position, but of great use in the first inversion, which is called the chord of the ***augmented sixth*** (as illustrated above).

Not ***every sharped sixth*** is an ***augmented sixth.*** A sharped ***minor sixth*** becomes a ***major sixth,***

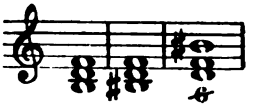


but a sharped ***major sixth*** becomes an ***augmented sixth.*** ***Every*** minor triad, in the first inversion, affords a ***major sixth,*** therefore by raising the root of any minor triad we get, in the first inversion, an ***augmented sixth.*** This is the result of "inversion," which is fully explained in the Appendix (G).

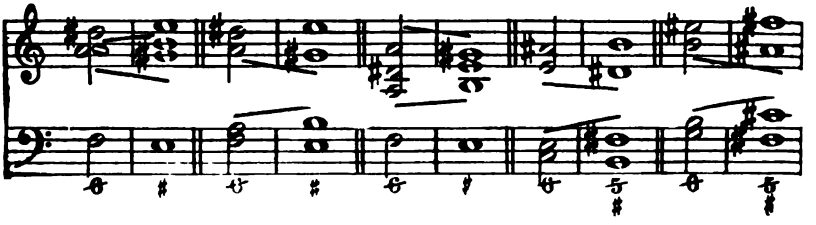



The inevitable progression of every ***augmented sixth*** is ***upward a minor second*** (i. e., a semitone). This is as invariable as the resolution of a seventh ***downward one degree.*** Yet in absolute distance an ***augmented sixth*** is the same as a ***minor seventh.*** This variable requirement of the same interval under different circumstances is treated of more at length in the Appendix (H).

All of the minor triads can be thus treated, but only those with a ***perfect fifth*** afford a perfectly satisfactory combination, like the above. With a ***diminished fifth,*** the effect is not good.

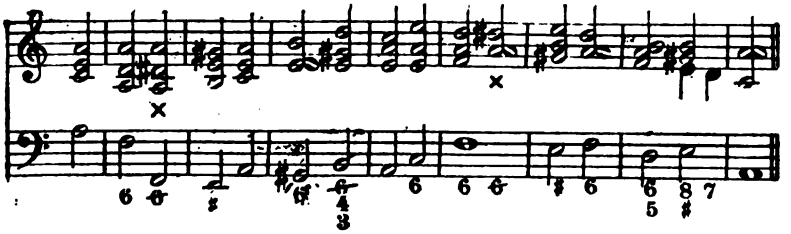


A peculiarity of the chord of the ***augmented sixth*** is, that ***only the third from the bass*** (the fifth from the root) ***can be doubled,*** as it is the only one having a ***double progression;*** thus,

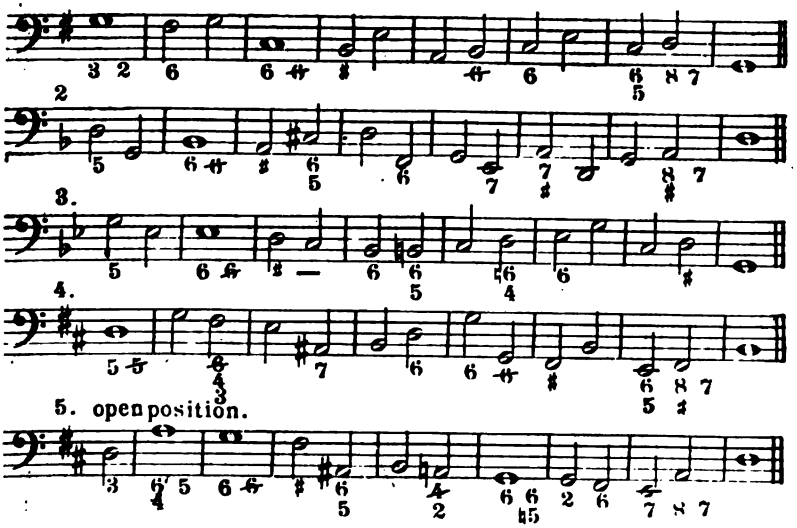


In the use of this chord the precaution must therefore always be taken of *doubling the third from the bass,* either in *octave* or in *unison.*

ILLUSTRATION.

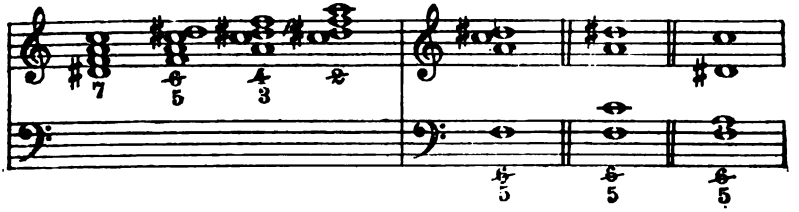


EXERCISES.

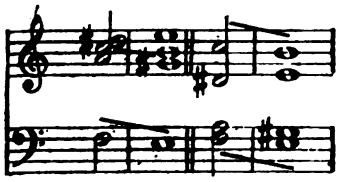



3rd. The Chord of the Augmented Sixth-and-Fifth.

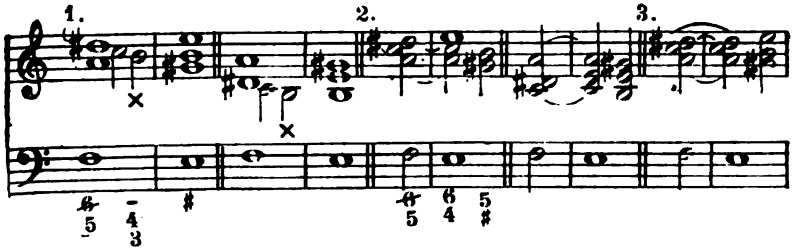
If to *any minor triad with perfect fifth and the root raised a semitone* we add the *seventh,* we obtain, with its inversions, four forms of a characteristic chord, of which only one, the first inversion, is used to any extent; but this one, the chord of the *augmented sixth-and-fifth,* is very effective.



The resolution of this discord offers a peculiar problem. The tendency of the third (the bass) as well as of the seventh, is downward, which results in parallel fifths.

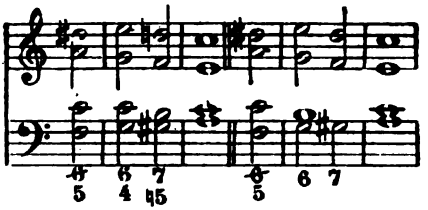


The reason of the downward tendency of the *third* (i. e., the bass) is in the fact that the next chord naturally contains a major third (in the example, G#), and the progression of the bass (from F to G#) is an *augmented second,* which is prohibited; the bass is therefore forced downward. There are two ways of avoiding the *parallel fifths;* first, by having these two voices move *successively* to their next tones, thus:



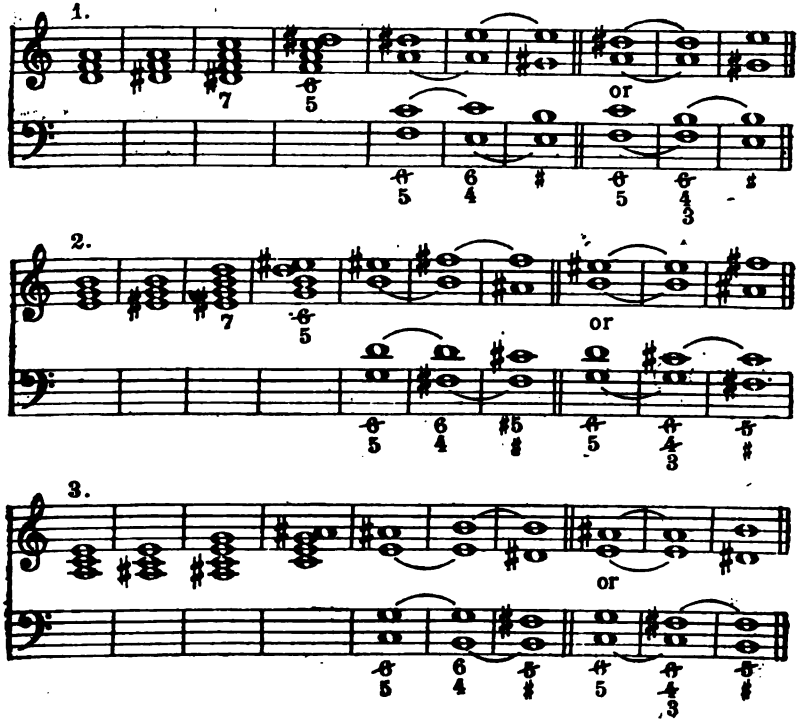

In the first of the above examples the seventh moves first, afterward the bass and other voices. In the second example the bass moves first, and with it the voice that moves into octave with the bass, afterward the seventh and the one remaining voice. The bass *can* move alone, as in the first example the seventh does, but the form of the resulting chord (3) can be understood only when we reach Suspension (Chap. XIII). According to the above, which is the more usual method of resolving this chord, *each voice moves a semitone; the root upward, the other three voices downward.* There is no law, excepting the requirement of the ear; and the pupil is advised to play the above resolution carefully, and then see if he can satisfactorily make either of the voices move in the direction more than a semitone.

The other method of avoiding the parallel fifth is by means of the following progressions, which are less pleasing and quite unusual:



All the facts concerning the chord of the *augmented sixth- and-fifth* have been illustrated by the use of a single chord of that sort. But as stated at the beginning, *any minor triad with perfect fifth, its root raised a semitone and the seventh added,* will give us the same effect in its first inversion. Every scale has three minor triads with perfect fifth, viz., on the second, third and sixth of the scale, illustrated in the C-scale thus:

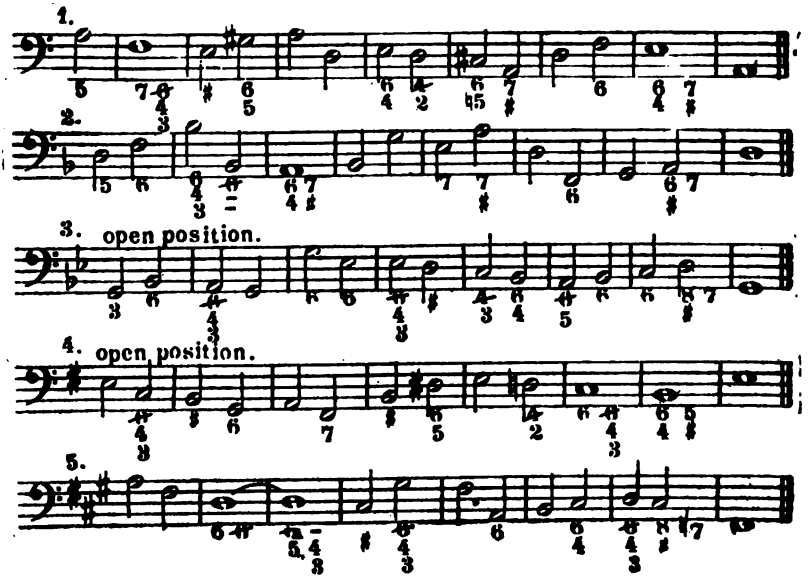
Raising the root, adding the seventh, taking the first inversion, and resolving according to the usual method, the procedure in the case of each of these is as follows:



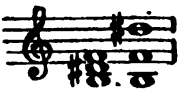
The two chords above differ only in *one* tone, and the ultimate resolution of the two is the same, but the root of the first is D, and the root of the second is B.

In the following exercises let the pupil determine which of the *sixth-fourth-and-third* chords have an augmented sixth, and which of them have only a major sixth.

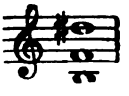
EXERCISES.



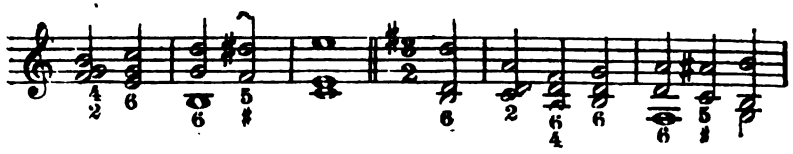

5th. The Diminished Triad with Major Third.



This is not of service in four-part harmony, as neither of the intervals admits of two progressions, and therefore cannot be doubled; and in three-part harmony it is of use only when the voices are dispersed in this manner,

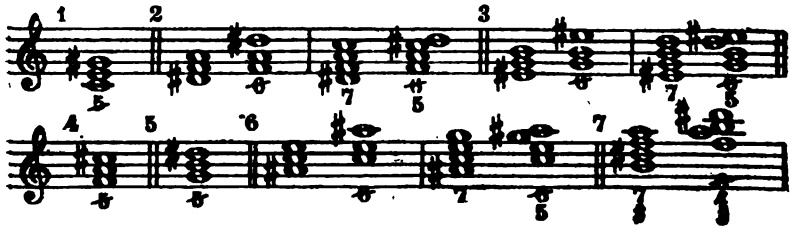


Its use can be illustrated thus:



The following will assist the memory in regard to these difficult "altered chords."

Every triad in the major scale is at the foundation of an "altered chord." From the three *major* triads (on 1st, 4th and 5th degrees). we get the chords with augmented fifth; from the four *minor* triads (on 2d, 3rd, 6th and 7th degrees) we get the chords with *augmented sixth;* using the first three for the chords of *augmented sixth,* and of *augmented sixth-and-fifth,* and the remaining one (on the 7th degree) for the chord of *augmented sixth-fourth-and-third,* thus:



For an explanation of the method of determining how a given distance is to be named, as for example an *augmented sixth* or a *minor seventh, an augmented fourth or a diminished fifth,* etc., see Appendix (I).

Beyond these five incidental re-formations of our two elementary harmonies (the common chord and the seventh-chord) there are no others that are to be ranked among the fundamental harmonies.

And in regard even to these five "altered chords," which are certainly striking in their effect, it should be observed that the substantial merit of any composition depends not to any great degree upon the startling effect of strange harmonies, but mainly upon the artistic use of the simple and familiar chords.

Chords are the words of music, and the deepest thoughts of any language find their best expression in the simplest terms of that language.

It is however incumbent upon the author of such a treatise as this to acquaint the pupil with *all* his working material, that he may be fully equipped for every emergency. At the same time this is a

most opportune occasion for reminding the prospective composer of a fact he can never afford to forget, namely, that when an author can find nothing *new* and *true* to say, he only cheapens his art by resorting to the startling.

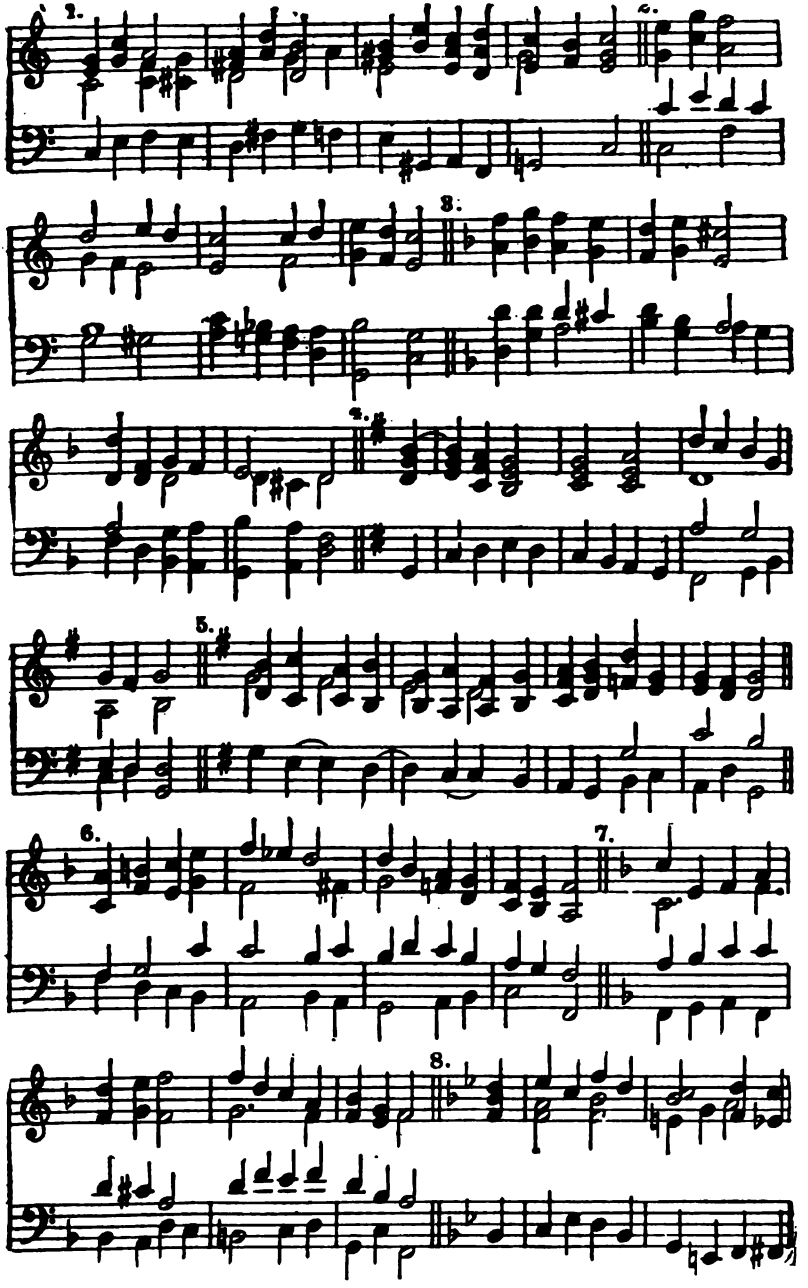
After the foregoing study of all the fundamental chords the pupil is in a position to appreciate the classification of those chords into the *independent* and the *dependent*, as made upon page 14. The *common chords* in general constitute the *independent* chords, as involving no definitely fixed progression. This is pre-eminently true of the *fundamental position* and the *first inversion* of the common chords; whereas the *second inversion*, the $\frac{6}{4}$ chord, by reason of the interval of the *fourth* which it contains, has in it something of the quality of a discord, and is thus followed most naturally and commonly by the *third* (as it were, the resolving tone of the fourth). The second inversion of the common chord is certainly the least independent, and is closely allied to the *dependent chords*, which have inherently a fixed progression, and comprise the *seventh-chords* (fundamental and inverted) and the *altered chords*. In other words, the *independent chords* are the *concordant*, the *dependent chords* are the *discordant*.

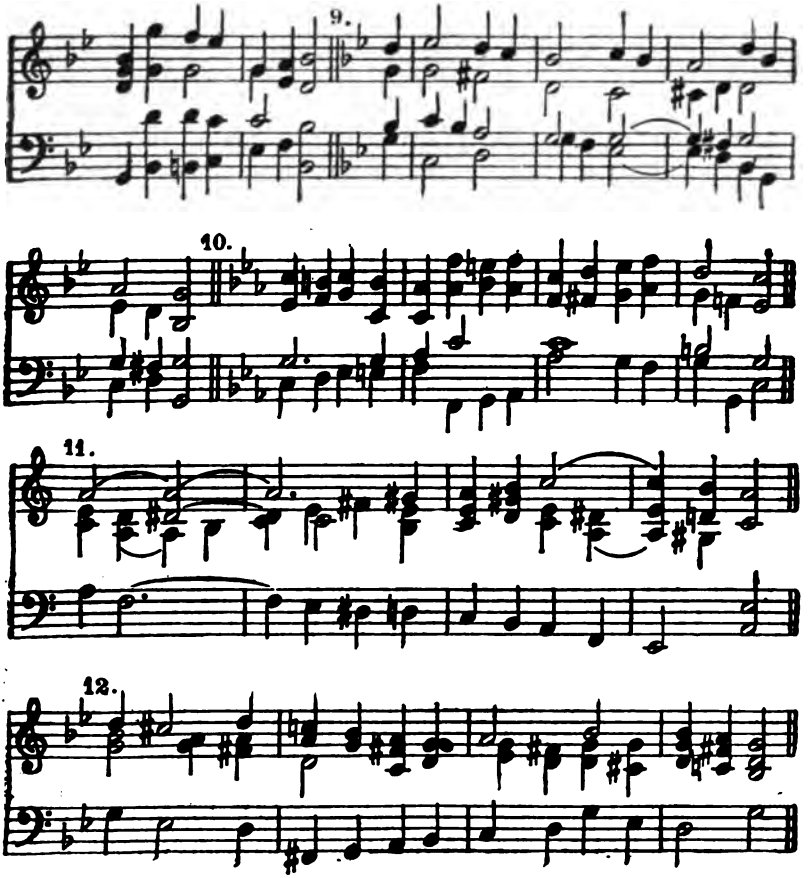
SUMMARY.

Three ways in which chords are altered by accidentals:—How many characteristically altered chords:—The terms that characterize the three sorts of altered chords:—Formation of the augmented triad:—Where it occurs in the minor scale:—On which degrees of the major scale serviceable:—In what way augmented interval is commonly introduced:—Effect of augmented fifth in minor triads:—Use of augmented triads in inversions:—Addition of seventh to the three augmented triads:—Comparative effectiveness of these three seventh-chords in their inversions:—Formation of augmented sixth chord:—Distinction between sharped sixth and augmented sixth:—Invariable progression of augmented sixth:—Which of the minor triads can be used to form augmented sixth chords:—Which interval only can be doubled, and why:—Formation of augmented sixth-and-fifth chord:—Problem in its resolution:—Solution of problem:—The natural interval of progression of each voice, moving from this chord:—Which of the triads of the scale can be used to form this chord:—Comparison of the three sixth-and-fifth chords of a scale, as regards the relation of the resolving chords to the scale:—A serviceable chord for modulation:—Formation of augmented sixth-fourth-and-third chord:—Diminished triad with major third, when serviceable:—The seven successive triads of the scale at the

foundation of what "altered chords":—The merit of a composition dependent chiefly upon what:—Meaning of independent and dependent, as applied to chords, and what chords are comprised in each class.

Figure the basses of the following Exercises.




9.
10.
11.
12.

# PART II.

## THE AUXILIARY CHORDS.

The chords which have thus far engaged our attention are the most important, as being the *fundamental* harmonies. They constitute the harmonic basis of all musical composition. They are the ***skeleton,*** solid and substantial, by whose firm continuity the whole structure is made coherent. But while in rare instances a whole composition (but of necessity very brief) may be developed out of these fundamental harmonies—as hymn tunes in choral style, like "Old Hundred"—the outlines of such a form of composition are evidently too rigid and angular for prolonged use. While "fundamental harmonies"—the bone and sinew of the composition—can never relegate their peculiar functions in what may be called the anatomy of music, it is no disparagement of their importance that they must be clothed upon, to insure a becoming grace. To afford ***flowing outlines,*** as well as infinite variety, where else we should be soon oppressed with an ungainly and repulsive austerity and endless monotony, is the function of the

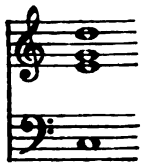
AUXILIARY CHORDS,

forming the rounded fleshly covering that gives constant proof of, yet at the same time gracefully conceals, the skeleton beneath. It is like the drapery that takes form from the very figure it hides.

These auxiliary effects may be classed as follows:

1. AUXILIARY CHORDS.
   (a) Suspension chords.
   (b) Auxiliary Chords, other than "suspension chords," to be described hereafter in detail.
2. AUXILIAR TONES, of various sorts, and known as ***passing tones, appogiaturas, grace notes,*** etc.

A so-called "auxiliary chord" is usually a combination of tones belonging to a "fundamental chord" ***with other tones foreign to that chord,*** so that we can speak of the *entire combination* as an ***auxiliary chord,*** or speak only of those single tones in the combination which are foreign to the fundamental chord, in that case calling them ***auxiliary tones.*** Thus we can call the following harmony an ***auxiliary chord,*** or speak of the soprano (d) as an ***auxiliary tone*** combined with the common chord of C.



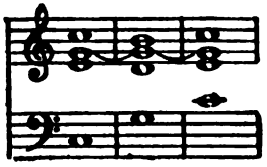
The foregoing furnish all the *Accessory Harmonies* wherewith the *Fundamental Harmonies* may be embellished; and the knowledge of both sorts, *Fundamental and Accessory,* makes possible the full analysis of all chords.

The several accessory effects given above must now be studied separately.

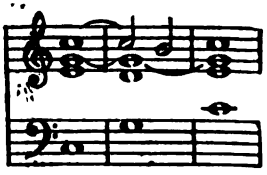
## CHAPTER XIII.

### SUSPENSION.

Hitherto the movement of all the voices from one chord to the next has been simultaneous. But under certain conditions one or more of the voices can be delayed on their tones in the first chord, while the remaining voices move to their places in the following chord. The result is a mixed chord; i. e., it is a combination of tones of which one part belongs to one chord, and the other part to the other chord. The tones that are thus held over from the previous chord are said to be *suspended.* In the following,



instead of having the soprano move to B at the *beginning* of the second measure, it can delay upon C until the last half of the second measure, thus:



The pupil must clearly distinguish between *suspension* and mere *retention* of a tone. Two chords often have a tone *in common,* which is then simply *retained,* and belongs as much to the second chord as to the first. Thus G, in the above example, is common to all three chords; but C, in the first half of the second measure, does not be-

long to the second measure (which belongs to the chord of G) and is foreign to the prevailing harmony. The proper tone of the harmony for soprano is B. The characteristic quality of a suspension, making it effective, is the *discordant* relation of the suspended tone to the true harmony of the measure.

There are three sorts of resolution, according to the movement of the voice from the suspended tone to the next, viz.,

(1) *Resolution downward.*

(2) *Resolution upward.*

(In these two sorts the voice moves by one diatonic degree down or up.)

(3) *Free resolution* (to be explained later).

(1) RESOLUTION DOWNWARD.

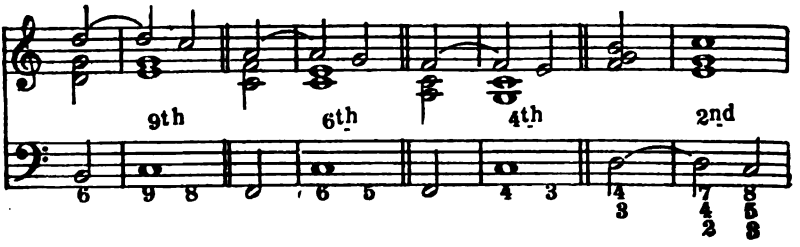
This method of *resolution.* in which the suspended tone leads to the next degree below, is by far the most common, as it is the inherent tendency of *every* discordant tone to lead *downward* to a concord. In the second sort of suspension we shall find that other considerations are involved, which counterbalance the natural downward tendency, and induce an upward movement.

By the very nature of the case, the suspended tone is heard in the previous chord; it is therefore *prepared,* and the natural law of discords requires also that it be *resolved* by leading downward one degree.

The simple law of suspension is—

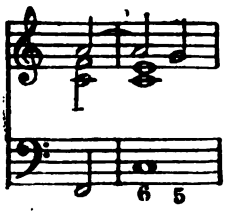
*Every suspension must be prepared and resolved, and in the same voice.*

Inasmuch as any tone of a chord can be suspended, if it can only be properly resolved in the next chord, it follows, inversely, that we can have a suspension above *each* component tone of a chord, provided that the tone above it belongs to the previous chord. Thus we can have a suspension above the 8th, or the 5th, or the 3rd, or the 1st (i. e., the bass tone); or, in other words, we may have a suspension of the *ninth,* of the *sixth,* of the *fourth,* and of the *second,* as follows:

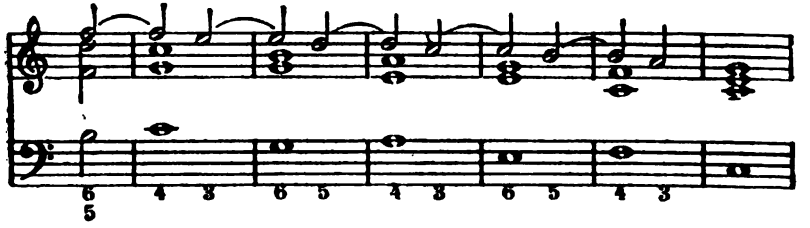


Of course, some suspensions are more effective and more frequently employed than others, but it is our present purpose to discover *all possible* suspensions, and in regard to those that appear least serviceable, there are circumstances that may justify and even require their use.

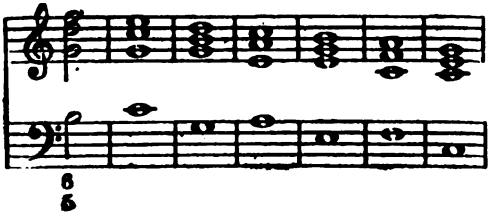
As before remarked, the characteristic feature of a suspension is its discordance with the prevailing harmony. But in the suspension of the sixth,




the suspended tone does not produce that effect, and the combination may be analyzed as simply a chord of the sixth followed by a common chord on the same bass tone. Any isolated case like the above would more naturally be treated, not as a suspension, but as a veritable sixth-chord; but when it occurs in a series of suspensions, the most intelligent analysis would find a suspension in this chord also. Thus in the following,




it is plain that the ruling harmony of each measure is that which is formed in the last half of each measure, and by omitting the suspension, the fundamental harmony is as follows:



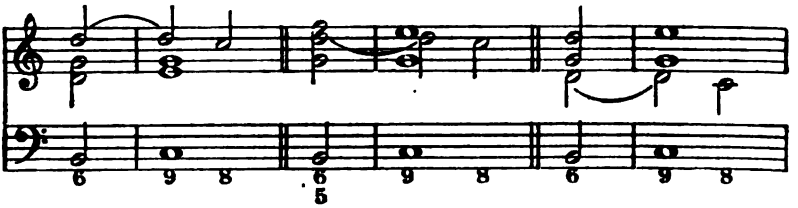

so that in the second and fourth measures we should properly treat the *sixth* as a suspension. We shall find other instances of concord-

ant suspension, where we must judge *by the circumstances* whether it be a genuine suspension.

We will now treat of each suspension singly.

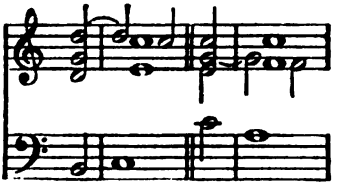
### Suspension of the Ninth.

This can occur in either of the three upper voices, thus:




It will be found more satisfactory in soprano or alto than in tenor, for the reason that the discordance, being between the suspended tone and the bass, is not so conspicuous when one or more tones, in concordant relation to the bass, intervene between the discordant tones, which draw the attention from the discordance. When the suspension is in the tenor, there can be no intervening tone to soften the effect.

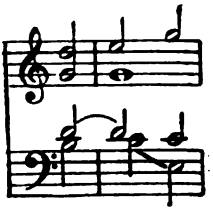
Heretofore no distinction has been made between the *ninth* and the *second*, and essentially they are the same. But *by the remove of one or more octaves* the harshness of the discord is mitigated—diluted by the distance. The suspension of a *second*, resolving into *unison*, like the following



is not endurable. The same objection exists to a similar suspension in the tenor,

but in less degree, because the combination, being at a lower pitch, is less shrill. While unsatisfactory if it resolves into unison, such a suspension of the *second* in the tenor is admissible, *if the bass*

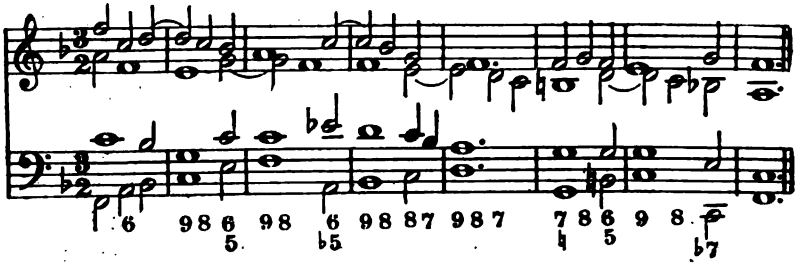
*moves away from the tone into which the tenor resolves,* thus:



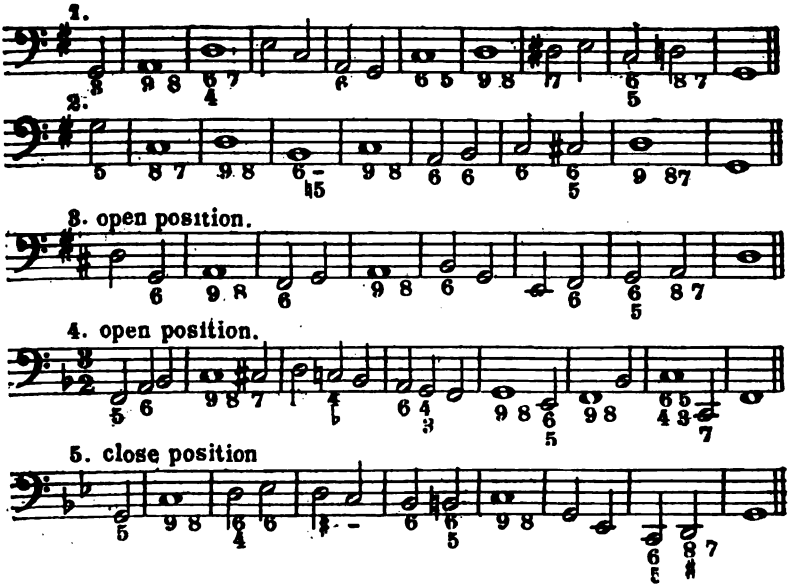
The figuring of the suspension of the ninth, with its resolution, is usually 9 8, abbreviated from $\frac{9}{5}\,\frac{8}{-}$. The procedure in writing this chord is:

*First find the ninth above the bass, put it in the same voice in which that tone occurred in the preceding chord, then put in the third and the fifth of the chord that is founded on the bass tone.*

ILLUSTRATION.

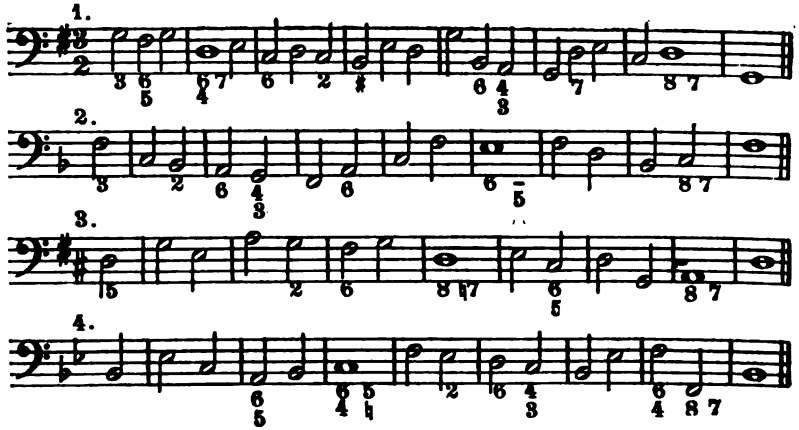


EXERCISES.



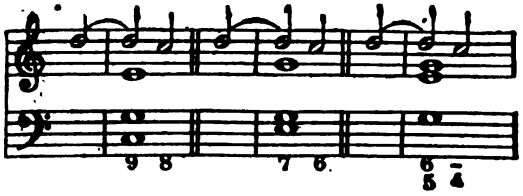
SIGHT-READING.

*With inversions of the dominant-seventh.*



SUSPENSION OF THE NINTH IN FIRST AND SECOND INVERSIONS.

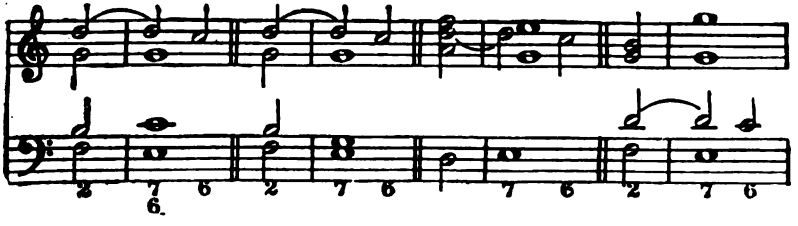
It is evident that the same tone can be suspended in the inversions as in the fundamental position, thus:



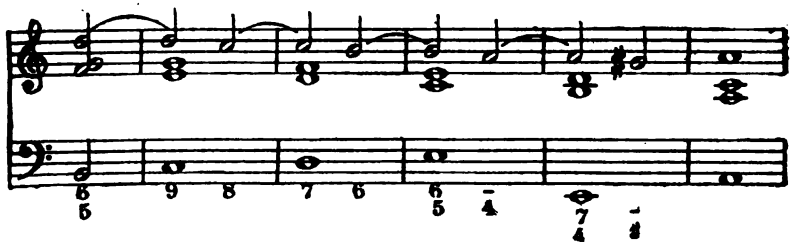
SUSPENSION OF THE NINTH IN FIRST INVERSION.

We have before seen that we can double either the *root, third* (occasionally) or *fifth,* in the first inversion.

by doubling the *root* we get one form of the chord in suspension, by doubling either *third* or *fifth* we get a slightly different form, thus:



The figuring of the two forms is given above. The second form *might* be analyzed as a simple chord of the seventh, on E, with omission of the fifth (B); and whether it is to be construed as a veritable seventh-chord, in fundamental position, or as a suspension of the ninth, in the first inversion, must be determined by the circumstance, whether it occurs *in a series of suspensions* or not. Thus in the following it is reasonable to interpret the seventh-chord as a suspension of the ninth, in first inversion,



because occurring in a series of suspensions, so that the ruling harmonies of the above measures are as follows:

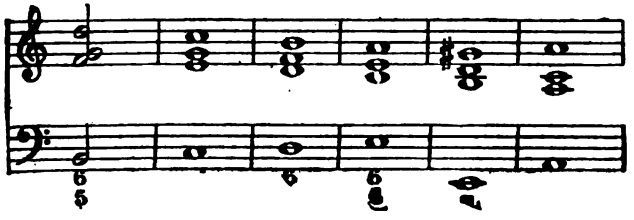
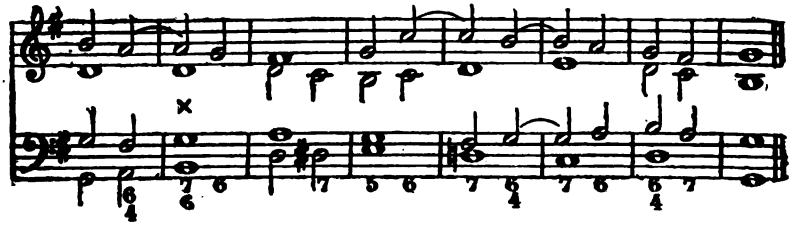
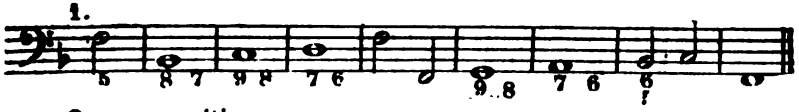


ILLUSTRATION.

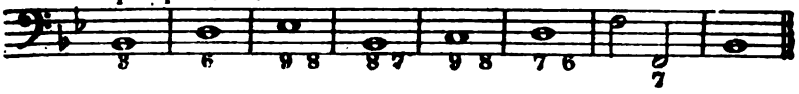


EXERCISES.

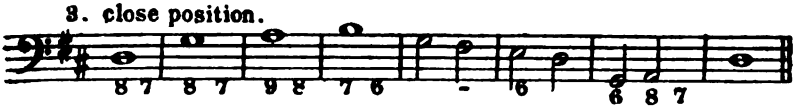
1.



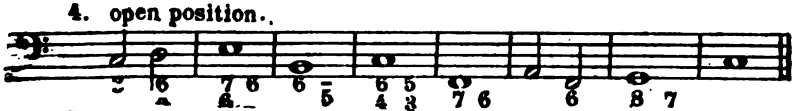
2. open position.



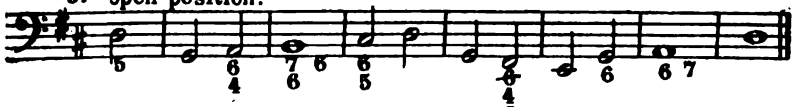
3. close position.



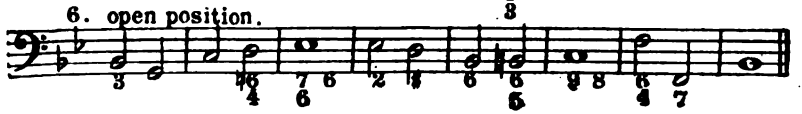
4. open position.



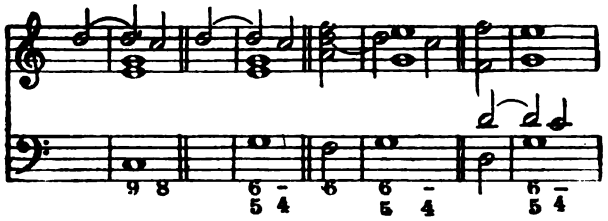
5. open position.



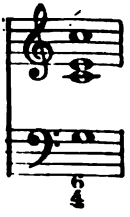
6. open position.



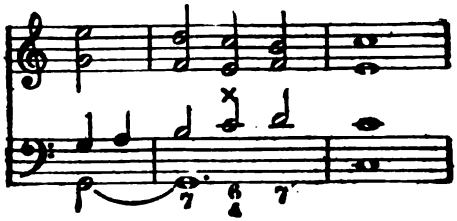
SUSPENSION OF THE NINTH IN SECOND INVERSION.



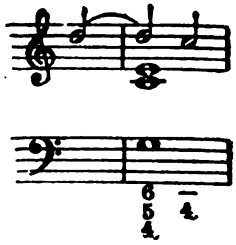
This is a very common and effective suspension. As in the chord of $\frac{6}{4}$, it is better to double the *fifth* (i. e., the bass tone), the same holds good when the suspension of the ninth is introduced into this chord, as in the example above. The doubling of the root in the chord of $\frac{6}{4}$ is usually to be avoided, as harsh;



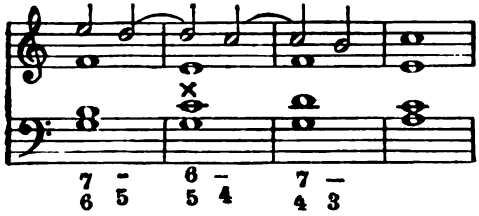
but the melodic progression of the voices sometimes makes it desirable, as in the following:



Similarly, the doubling of the root in this chord of $\frac{6}{4}$ with a suspension of the ninth is still more harsh, as the suspension and its resolving tone (an octave distanct) are heard simultaneously;



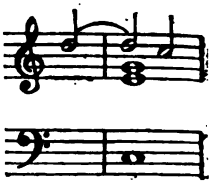
but melodic considerations can also make this desirable:



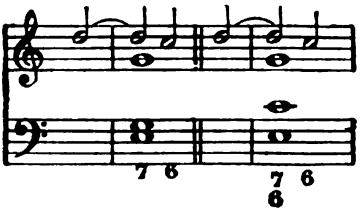
The figuring of the suspension of the ninth, in the second inversion, is $\frac{6}{5}$, which is to be carefully distinguished from our previous $\frac{6}{5}$, which signifies the *first inversion* of a *seventh-chord;* for the analysis of our present combination shows it to be a common chord, with the root a fifth below, and with a *foreign element* (the suspended tone) in it. Inasmuch as we shall find several other suspension-chords, whose figuring is identical with that of some of the chords already learned in Part I (the fundamental harmonies), but *utterly different in their nature and progression,* it is in general inadvisable to name the suspension-chords from their figuring. There are only three exceptions to this:—the *suspension of the ninth* and *suspension of the fourth,* in their fundamental position, are called the *chord of the ninth,* and *chord of the fourth.* Also the suspension of the fourth in the bass is called the chord of the

*fifth-and-second.*. The remaining suspension chords are indicated by *giving the name of the suspension as in its fundamental position, and adding the inversion as the case may be.* The suspensions thus far considered are therefore named as follows:

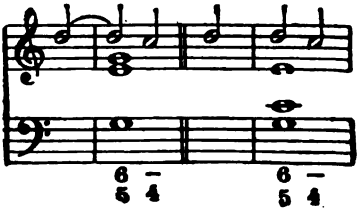
CHORD OF THE NINTH.



SUSPENSION OF THE NINTH, FIRST INVERSION.



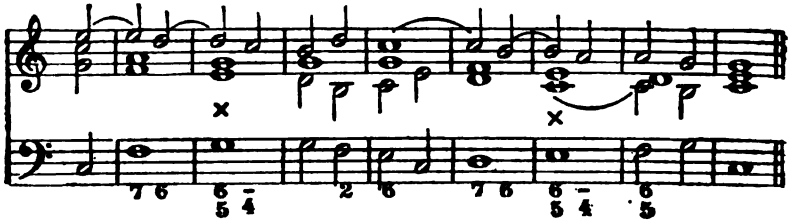

SUSPENSION OF THE NINTH, SECOND INVERSION.



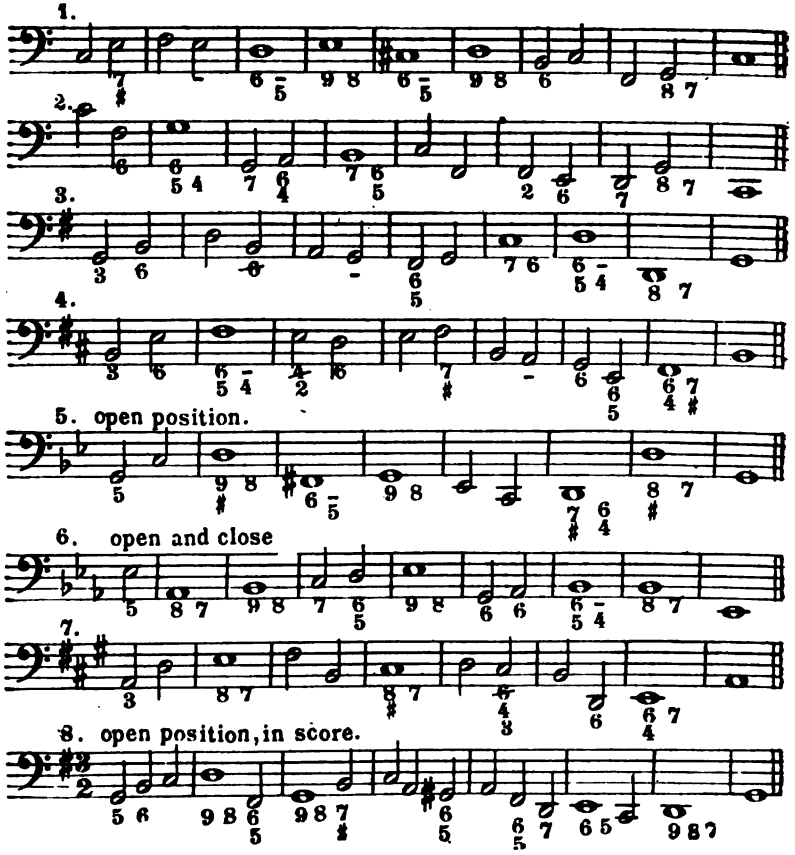

This manner of naming them *affords the only complete analysis of the chords,* and is by far the simplest.

With the figures $\frac{6}{5}\,\frac{-}{4}$ the suspension of the ninth, second inversion, can be written in either of the above given forms, although there is no figure to account for C in tenor of second form. But in writing this C, although not expressed in the figuring, we are not at all violating the *nature* of the chord. Intelligent harmonizing must rise above the mere mathematical calculation, and grasp the inner nature and spirit of the chords.

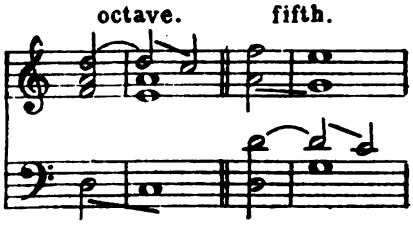
ILLUSTRATION.



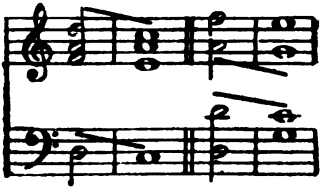
EXERCISES.




The suspension is merely a *delay* in the progression, and therefore no progression can be allowed, in the use of suspension, which would be incorrect without the delay. Thus the following are faulty,

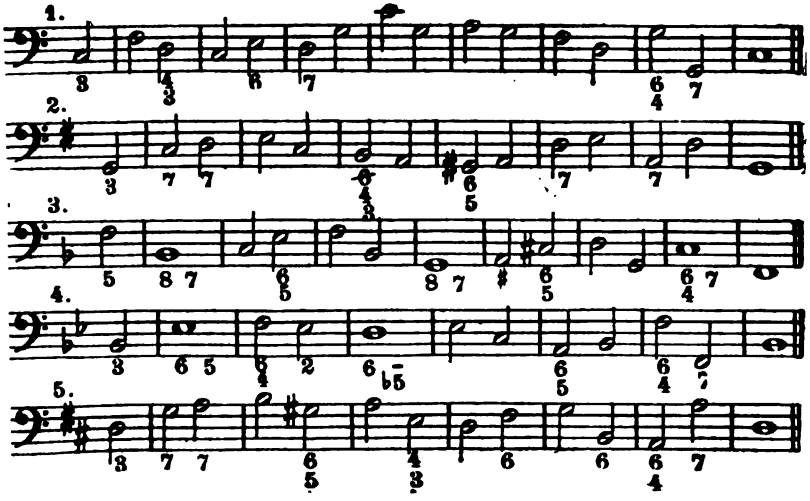



because the octave and fifth are inadmissible without the suspension, thus:



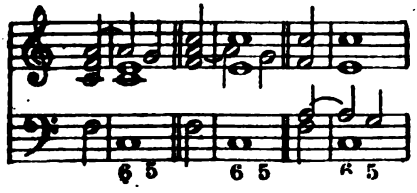
SIGHT-READING.

*With secondary-seventh chords.*

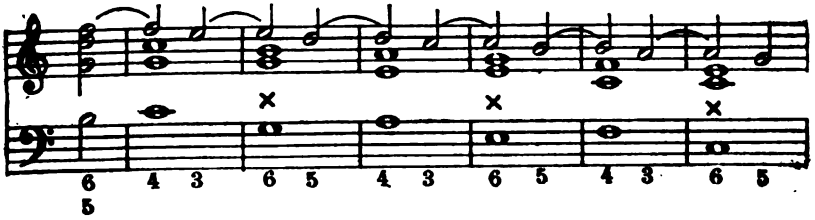



SUSPENSION OF THE SIXTH.

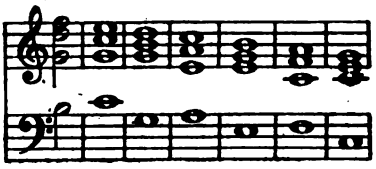
*Fundamental position.*



In its construction this does not differ at all from a chord of the *sixth*, and not being a discordant suspension, will be regarded as a suspension only in a series of such chords, thus:

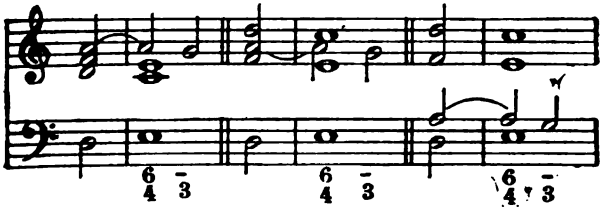


The ruling harmony of each measure is



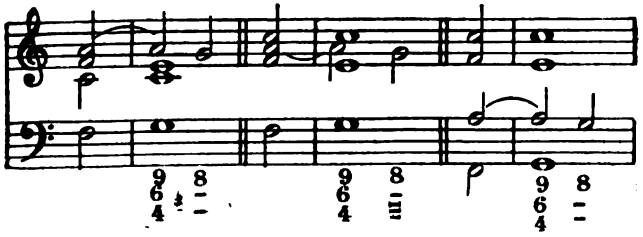
This chord needs no special illustration nor exercises.

*First inversion.*



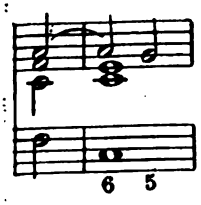
In its construction this does not differ at all from a chord of the *sixth-and-fourth*, and will therefore be regarded as a suspension only in a series of such chords. No special illustration nor exercises are necessary.

*Secoond inversion.*

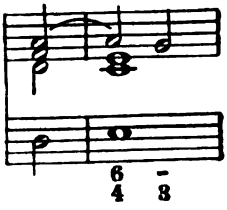


The figuring of this chord is $\frac{9}{6}_{4}$ but the pupil must be careful not to call it a suspension of the ninth, although the suspended tone is a ninth from the bass, but should recognize in it the *suspension of the sixth, in the second inversion.*

Suspension of the Sixth.



Suspension of the Sixth, first inversion.



Suspension of the Sixth, second inversion.

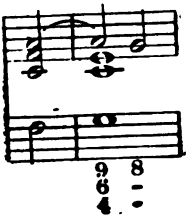
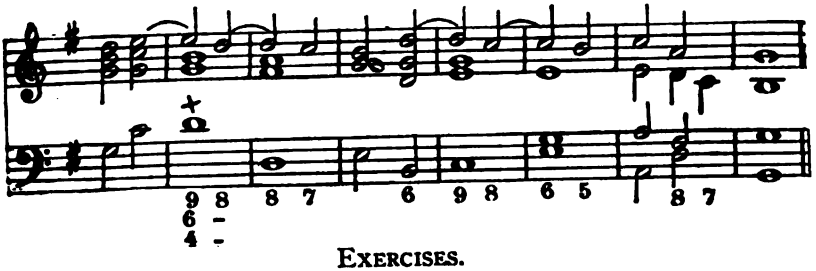
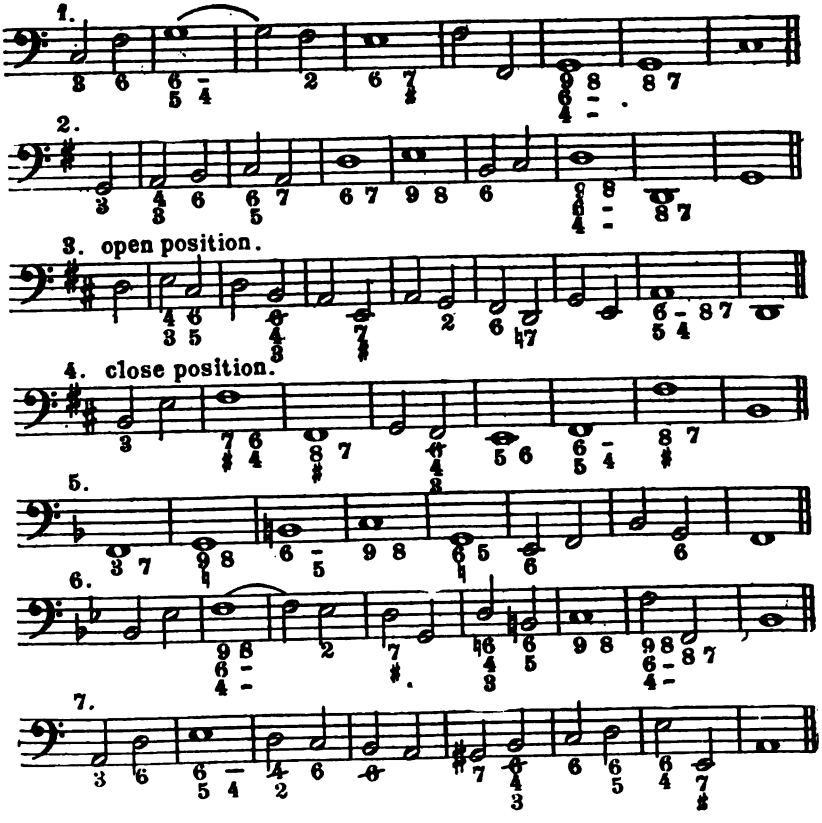


ILLUSTRATION.

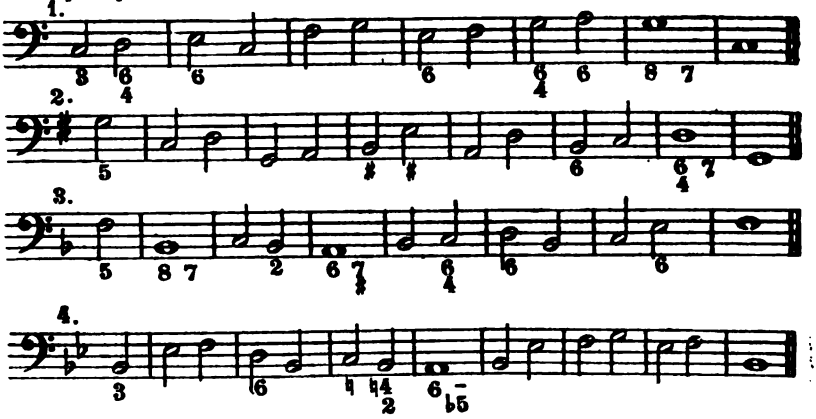


EXERCISES.



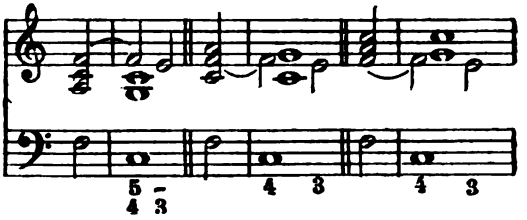
SIGHT-READING.

Open position.



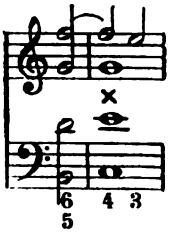
SUSPENSION OF THE FOURTH.

Fundamental position.

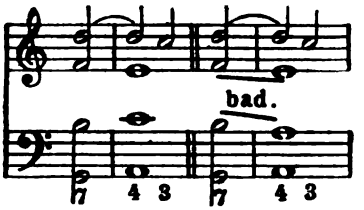


The full figuring of this suspension with its resolution is $\frac{5}{4}\ \frac{-}{3}$, usually abbreviated to 4 3.

It is usually better not to have this suspension and its resolving tone (even an octave distant) heard simultaneously.



But when there is a *whole* tone, instead of a *half* tone, between the degrees of the scale on which the suspension and its resolution occur (so that the fourth and third of the chord are in a less harsh relation to each other),




and when, in addition, there is an evident melodic progression in two voices, in contrary motion, such an effect is admissible, thus:

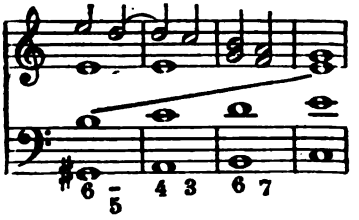
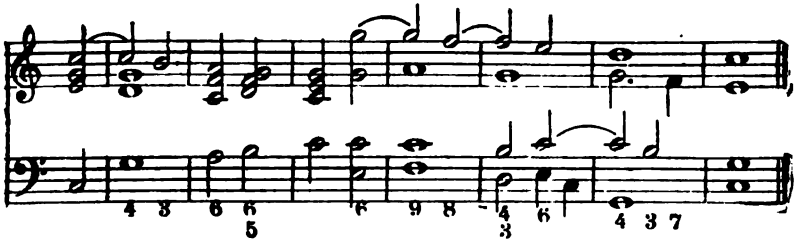
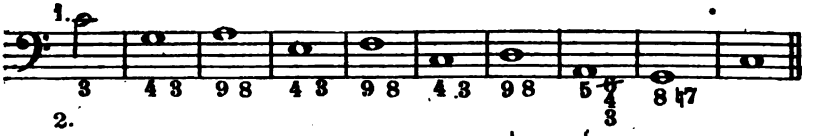


ILLUSTRATION.

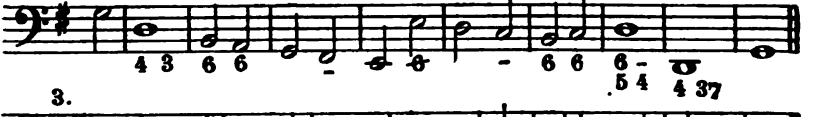


EXERCISES.

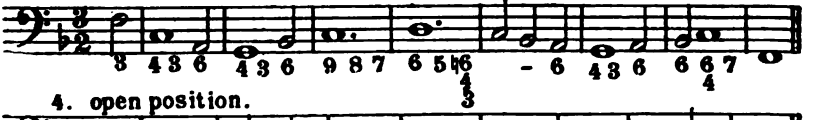
1.



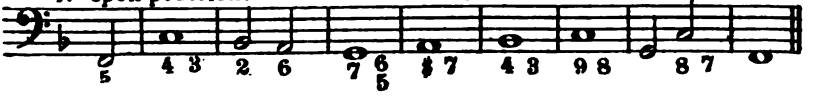
2.



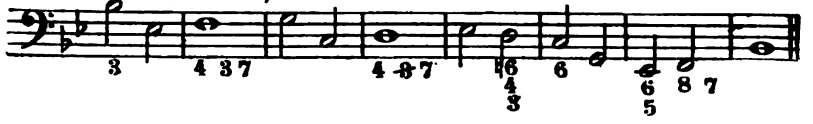
3.



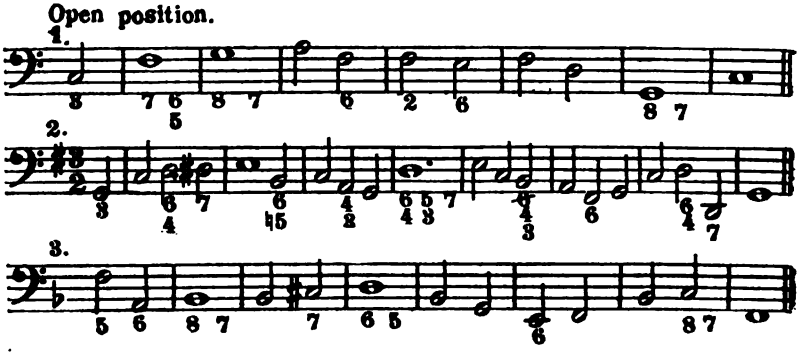
4. open position.



5. close position; in score.



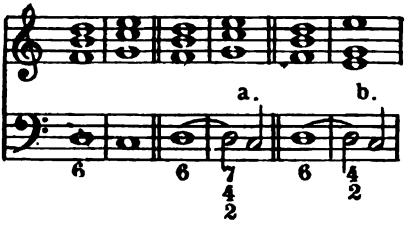
SIGHT-READING.




SUSPENSION IN THE BASS.

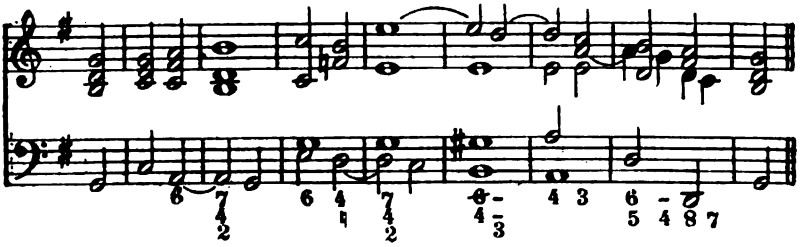
Thus far every suspension has occurred in the three upper parts, but it can be introduced equally well into the bass, provided the suspended tone be properly *prepared* and *resolved*. This affords opportunity for three suspensions in the bass, one of which is among the most common and effective of suspensions, while the other two are suited only to peculiar circumstances, and rarely occur. These three suspensions are derived, like all the foregoing, from the fundamental position and two inversions of the common chord.

SUSPENSION OF THE SECOND (IN THE BASS.)

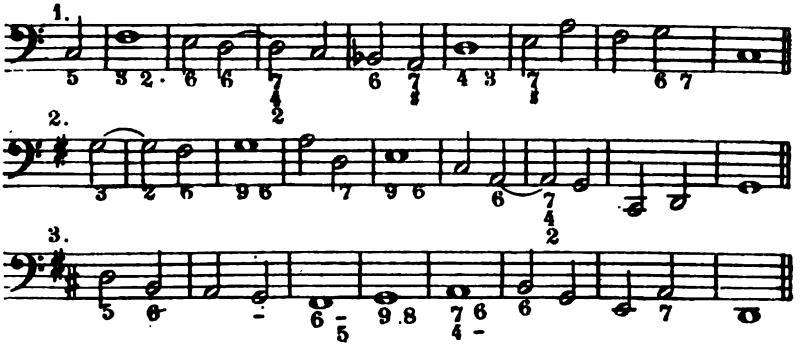



The first form is harsh, because the suspension (D) and its resolving tone (C, an octave distant) are heard simultaneously. The second form is better, doubling the *third* (E), instead of the *root* (C). No figuring is needed under the resolving note, as it is the root of the common chord. The student cannot fail to understand this suspension, if he will compare it with the progression in the first two chords given above. This suspension rarely occurs except in a series of suspensions in the bass.

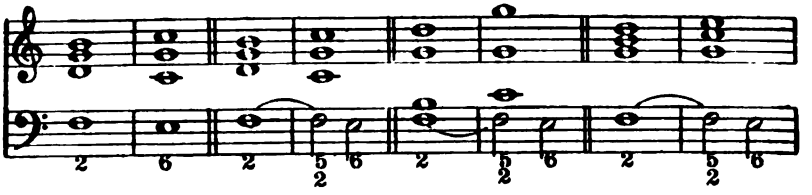
ILLUSTRATION.



EXERCISES.




SUSPENSION OF THE FOURTH IN THE BASS.



This is very frequently used, doubling either the root or the fifth, as above. The third can be doubled only when the melodic progression absolutely requires it, and needs no additional figure to express it. This chord is called the chord of the *fifth-and-second*.

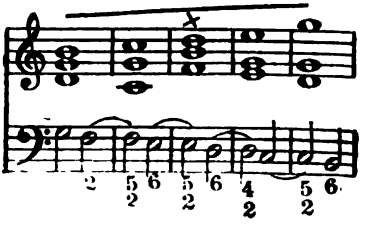
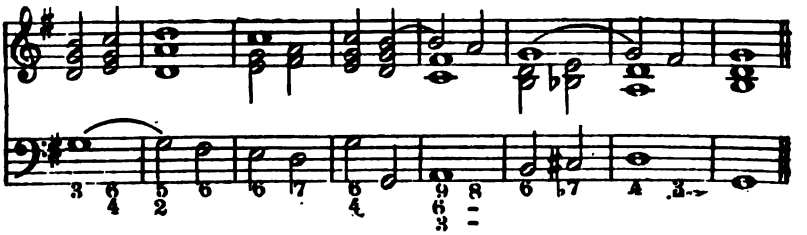
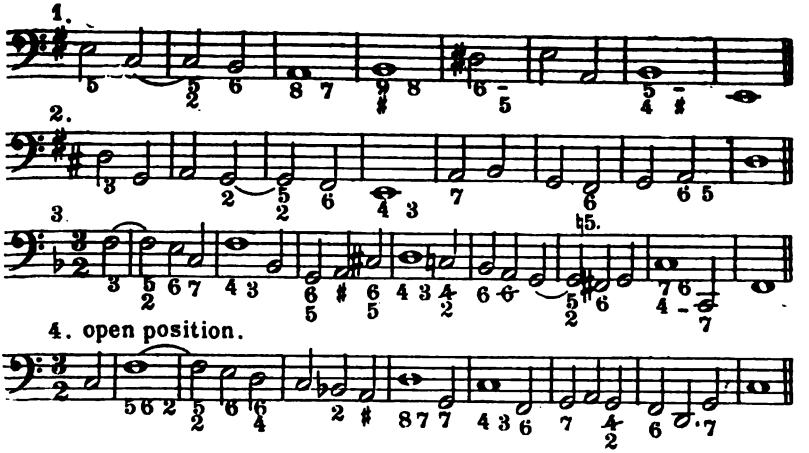


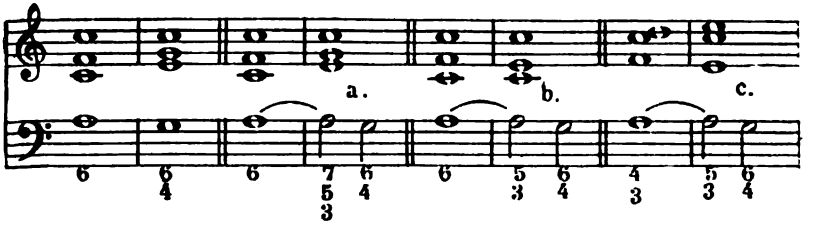
ILLUSTRATION.



EXERCISES.

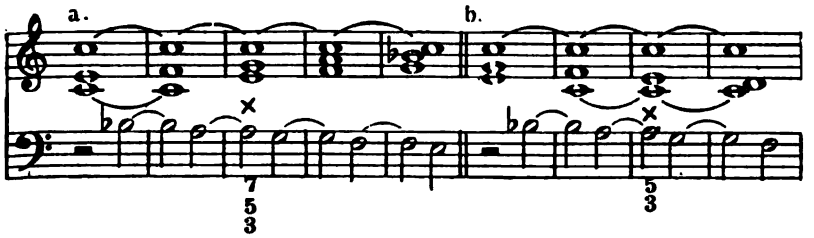



SUSPENSION OF THE SIXTH IN THE BASS.




This will be a concordant or a discordant suspension, according to the element of the chord that is doubled. If the *fifth* be doubled, as at (a), it is discordant, but if the *root* or *third* be doubled, as at (b) and (c), it will be concordant. (We are here speaking, of course, of the root, third and fifth in the *resolving* chord, which is the ruling harmony of the measure, although it is fully expressed only in the last half of the measure). This suspension seldom occurs except in a series, and whether the concordant or the discord

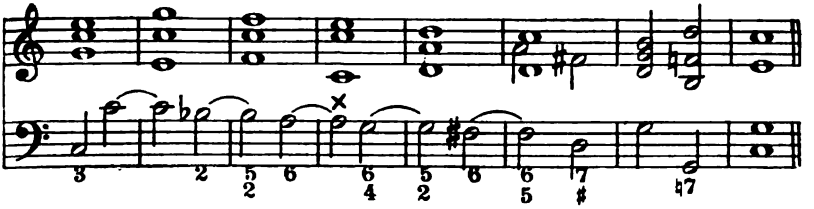
ant form should be adopted, depends largely upon the melodic progression in the other pars, thus:



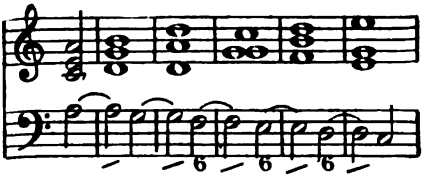

The above examples strikingly illustrate how imperfectly the *mere figuring* expresses the true nature of a chord. Thus in the first example, the first chord of the third measure is figured $\frac{7}{5}_{3}$. Now it is in the nature of a genuine seventh-chord for the seventh to move toward the bass. But in this case, being a suspension, it is plainly in the nature of the bass to move away from the seventh; yet the two chords have precisely the same figures. Again, in the second example, the first chord of the third measure is figured $\frac{5}{3}$. In its construction it is a common chord, in its nature it is plainly a suspension, and thus the (apparently) seventh-chord in the first example, and the (apparently) common chord in the second example, *are in their nature identical!*

In the *concordant* form of this suspension, as the figuring is $\frac{5}{3}$, it is unnecessary to express it, as will be seen in the following:

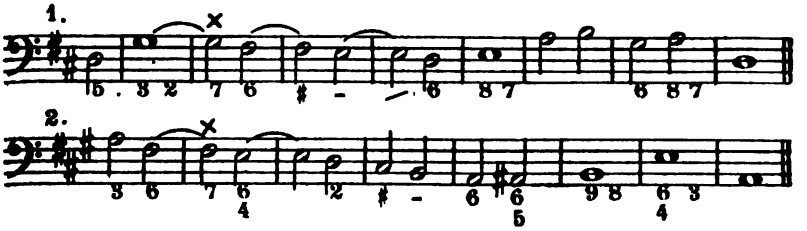
ILLUSTRATION.



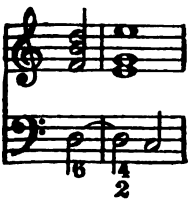
When the suspension is in the bass, its harmony, being the same as that of the succeeding bass note, may be expressed by a diagonal dash, pointing forward to the following harmony, which is also to be its own, thus:



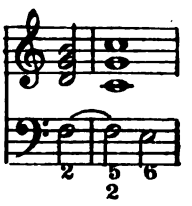
EXERCISES.



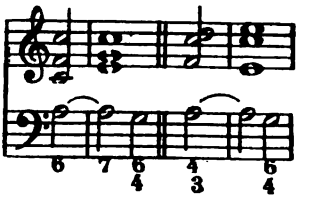

Suspension of the Second, in bass.



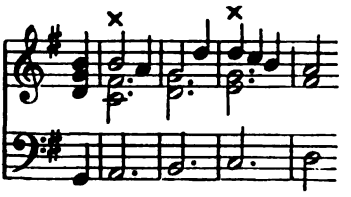
Suspension of the Fourth, in bass.



Suspension of the Sixth, in bass.



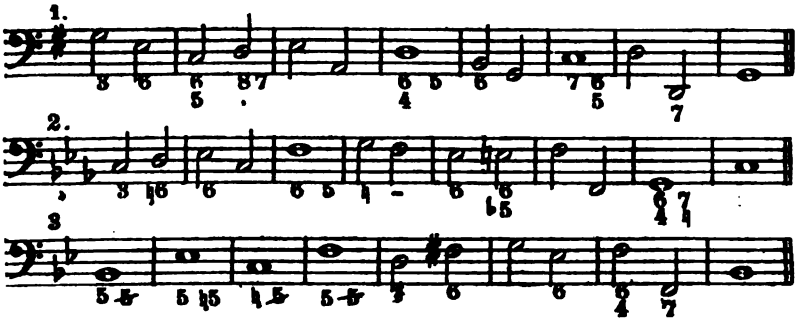
It is needless to remark that the foregoing and subsequent exercises are really marred, musically speaking, by the extreme number of suspensions contained in them. But these exercises are primarily for technical drill, not for musical effect, and at the same time the pupil is becoming more adept in the use of those fundamental chords, by the mixture of which we obtain all our suspensions. It is also to be observed that the *tie*, by which the suspended tone and its preparation are commonly connected, *is not an essential element of the suspension*, and the effect is often much better if the suspended tone be struck again, thus:



The normal proportion of concord and discord in music requires that in general the suspended tone (which may always be shorter) should not be any longer than its "preparation," as in that case the discord would predominate over the concord. Yet the rule often admits of an exception, as is illustrated in the first suspension of the foregoing example. In composition we find frequent occurrence of the exception, and, especially in piano music, the omission of the tie; whereas in organ music the tie is more common. Let the pupil

discover for himself why the tie should be less used in piano than in organ music.

SIGHT-READING.



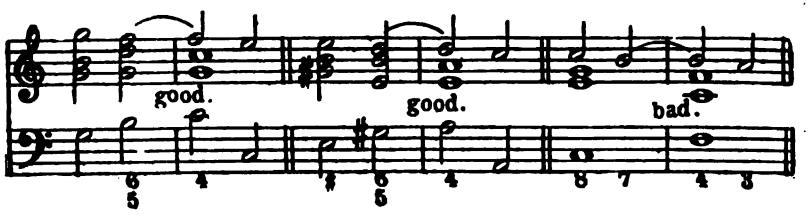

We have now treated of *all the single suspensions possible* in the common chord and its inversions. We have next to consider

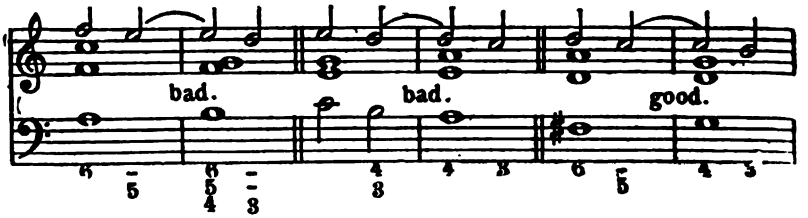
SUSPENSION IN THE CHORD OF THE SEVENTH.

The most satisfactory of all suspensions are those in the seventh-chord, by reason of the greater richness of harmony, which softens, without effacing, the discordance of the suspension.

All the possible seventh-chord suspensions will be presented, but briefly; as no new difficulties are involved. The *dominant-seventh chord* will be used in illustration, as the most common and satisfactory.

(While all the secondary-seventh chords are "fundamental chords", and as such may have their several tones suspended in a following chord, it will be found that the *seventh interval itself* of any secondary seventh chord (either in fundamental or inverted form), is too harsh to admit of the delay in its resolution, and cannot in general be suspended; but any other tone of such a chord can be suspended. On the other hand, the seventh interval of a dominant-seventh, or of a secondary-seventh "in dominant-seventh form", can be suspended, thus:

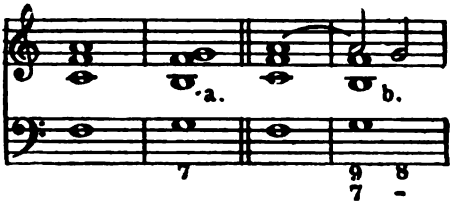





The harshness of any discord is softened by quickly passing from it, and the above that are marked "bad" may be allowable when the notes are quarters or eighths, instead of halves. Such effects will be considered later, under the subject of auxiliary tones, Chap. XV.

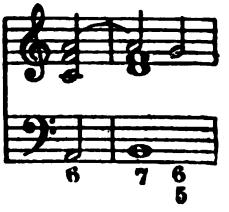
SUSPENSION OF THE NINTH.

Fundamental position.



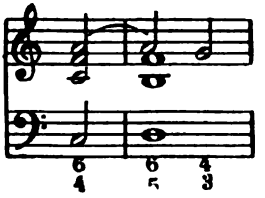

It will be remembered that in the seventh-chord the root is often doubled, and the fifth omitted (as above (a) ). This affords opportunity for the suspension of the ninth, in connection with the seventh (as above (b) ). The third can be omitted, instead of the fifth, but this should not be done when it can be avoided.

First inversion.



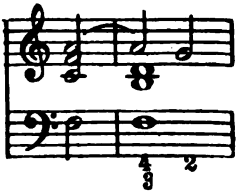
It will be seen that this *results* in a chord of the seventh on B, and being resolved similarly, it will be regarded as a suspension only when occurring in a series.

Second inversion.



This results in a first inversion of a seventh-chord on B, resolves similarly, and needs no special comment.

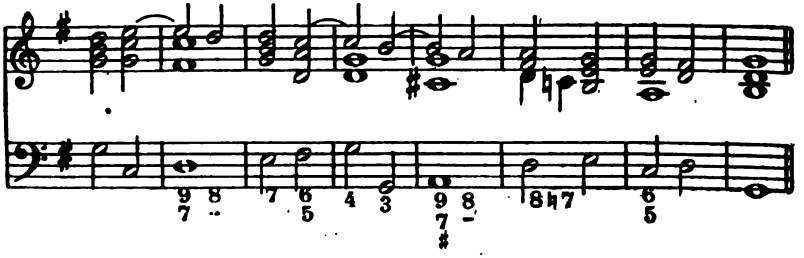
Third inversion.



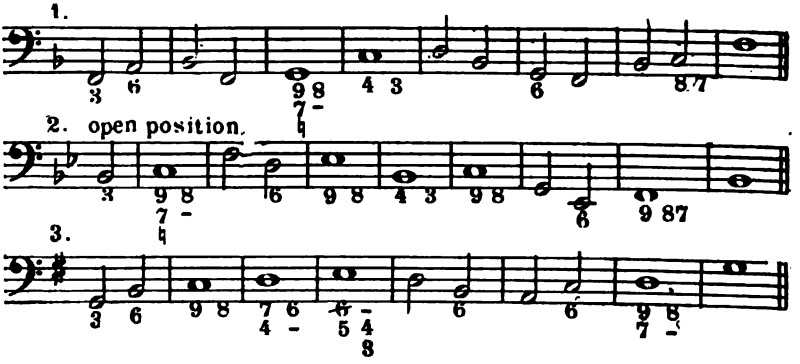
This results in a second inversion of a seventh-chord on B, resolves similarly, and needs no special comment.

In the above set of suspensions, the first, called the chord of the ninth and seventh, alone requires practice.

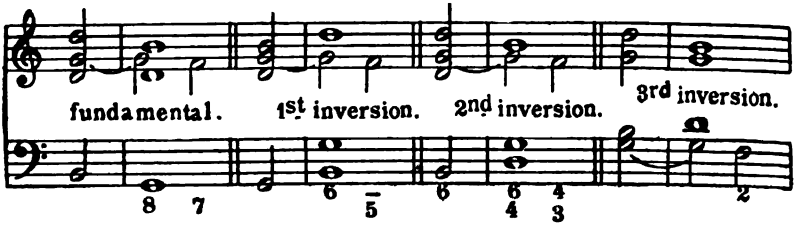
ILLUSTRATION.



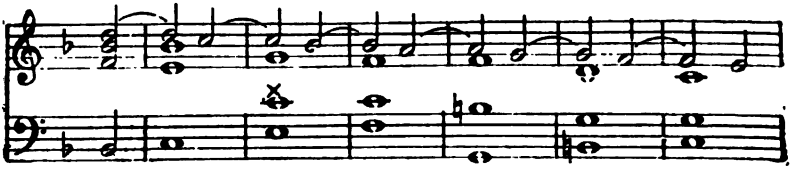
EXERCISES.



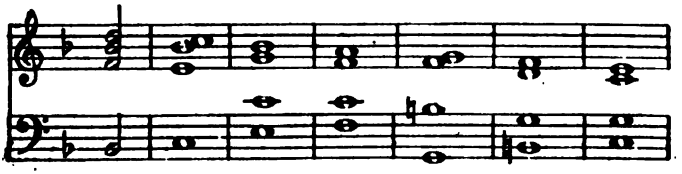

SUSPENSION OF THE EIGHTH.



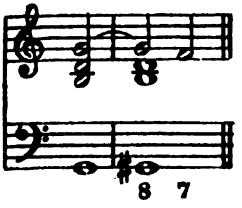
The suspension of the *perfect eighth*, resolving into the seventh, presents again the anomaly of the common chord in the aspect of a suspension, and it would certainly never be classed as such, except in such connection as the following



where the ruling harmonies of the measures are as follows:



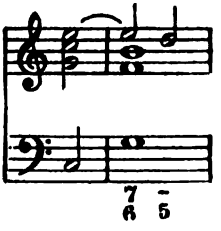
But by the use of the *diminished eighth*,




we get an unequivocal suspension above the seventh; but it is too harsh for frequent use.

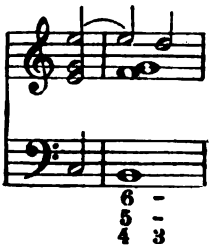
### Suspension of the Sixth.

Fundamental position.

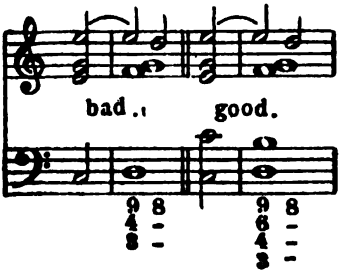



In the common chord this suspension lacks the *discordant quality*, which is here furnished by the *seventh* (F) in its relation to the *sixth* (E).

First inversion:

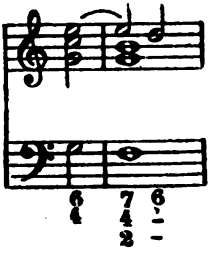


Second inversion:

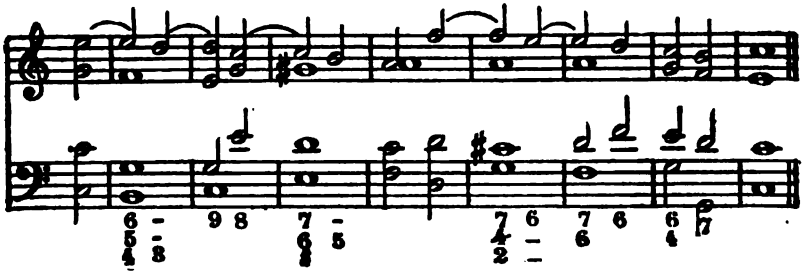



This is not good in four-part harmony, but good in five-part.

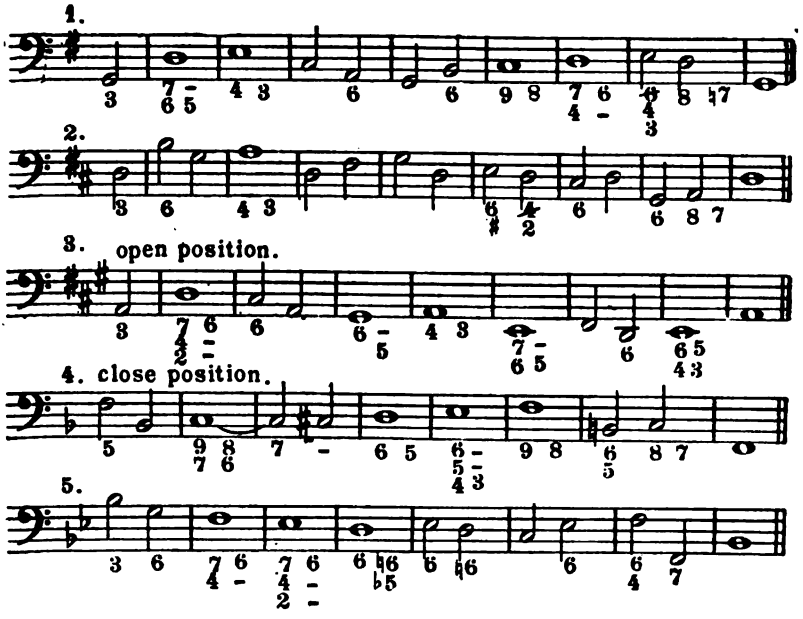
Third inversion:



Let the pupil indicate all the sixth-suspensions in the following:

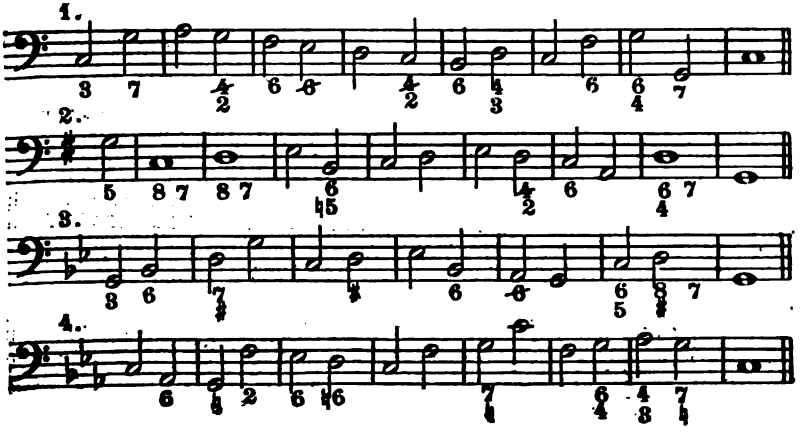


EXERCISES.



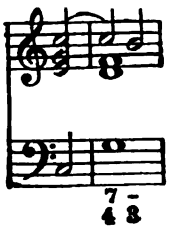

The pupil should examine each suspension in the foregoing and subsequent exercises, and give its exact name, according to the previously given method (page 137). Faithful practice of this sort will give a mastery of the subject.

SIGHT-READING.



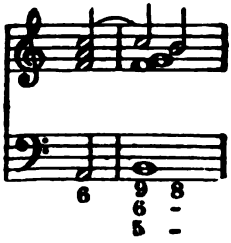
SUSPENSION OF THE FOURTH.

Fundamental position.



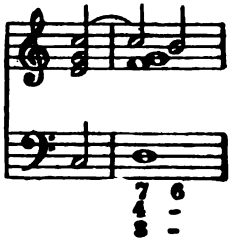
The above figures $\frac{7}{4}$ call for only F and C. By what authority is D inserted? The harmony of the first half of the measure (in a suspension) is found from the tones of the second half, only substituting the suspended tone for one element of the chord. As the figures $\frac{7}{3}$ mean the seventh-chord on G, it of course involves the *fifth* (D), which is therefore in the harmony of the first half of the measure.

First inversion:



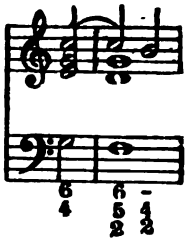
a harsh and unserviceable suspension.

Second inversion:



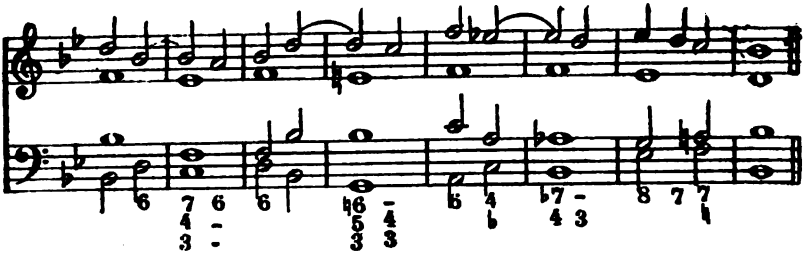
an effective suspension.

Third inversion:

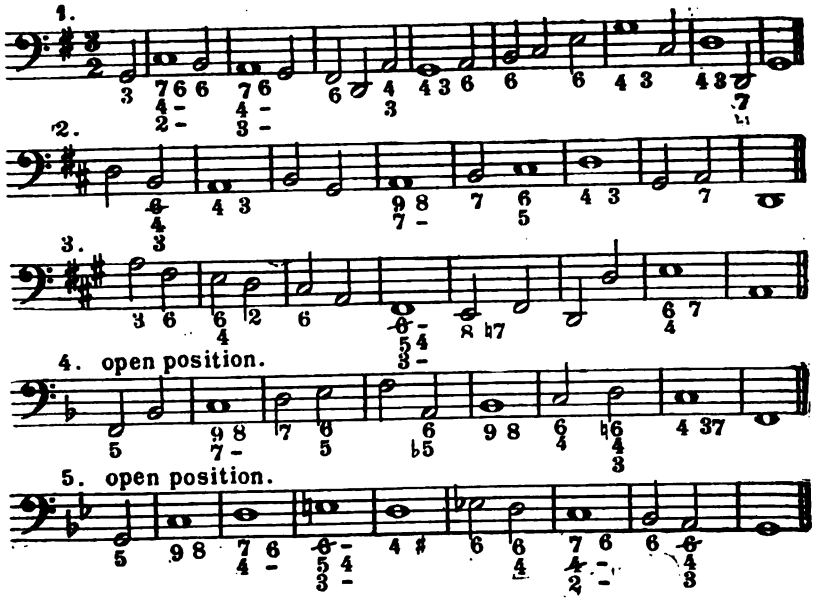


an effective suspension.

ILLUSTRATION.

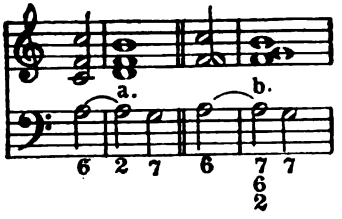


EXERCISES.




SUSPENSION IN THE BASS.

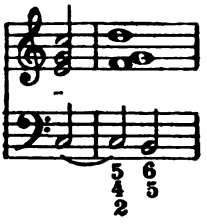
Fundamental position.




In one form (without doubling the root) equivalent to a chord of

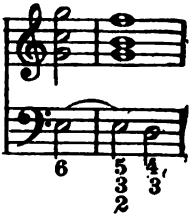
the second, as at (a). The other form (b) is rarely serviceable in four-part harmony.

First inversion:



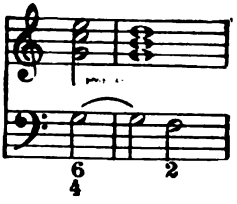
very good.

Second inversion:



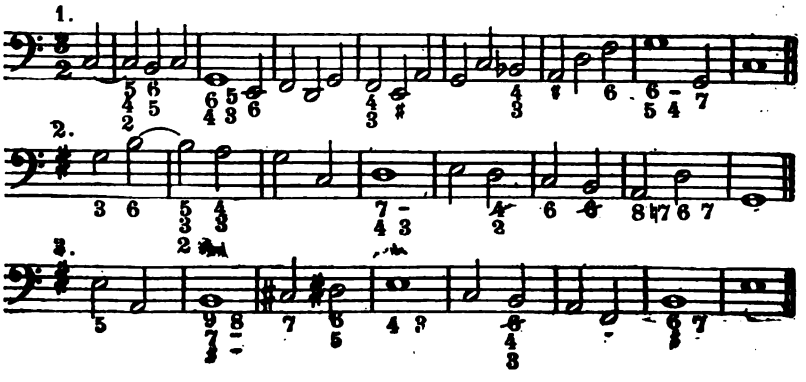
good.

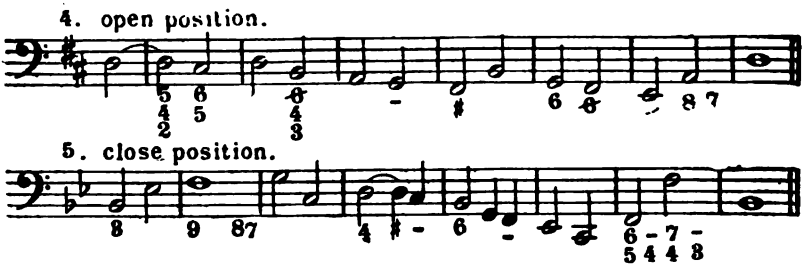
Third inversion:



recognizable as a suspension only in a series.

EXERCISES.






SUMMARY.

Necessity of auxiliary chords:—Classification of auxiliary effects:—Definition of Suspension:—The characteristic quality of a suspension:—Three sorts of suspension:—The law of suspension:—What suspensions are possible in the common chord:—Why suspension of the *sixth* is more naturally regarded as a fundamental chord of the *sixth*:—Suspension of ninth most effective in which voices:—Distinction between *ninth* and *second*:—Suspension of second in tenor:—Figuring of suspension of ninth, and its resolution:—Procedure in writing this chord:—Suspension of ninth in first inversion, in two forms, and figuring of each:—In one of its forms equivalent to what chord:—Suspension of ninth in second inversion. and its figuring:—This chord equivalent to what fundamental chord:—Proper method of designating a suspension-chord:—What suspensions are to be avoided:—Suspension of sixth in first inversion equivalent to what fundamental chord:—Suspension of sixth in second inversion how figured:—Suspension of fourth how figured:—When can its resolution (an octave distant) be heard simultaneously with the suspension:—First inversion with resolution how figured:—Second inversion with resolution how figured:—Suspension of second in bass, in two forms:—Suspension of fourth in bass how figured:—Suspension of sixth in bass in two forms:—In the discordant form equivalent to what fundamental chord:—Tie not essential to suspension:—Relative length of preparation and suspension:—Suspension in chord of the seventh:—When can a suspension be prepared by a *seventh*:—Suspension of ninth in seventh-chord how figured:—Three inversions of same equivalent to what fundamental chords:—Suspension of eighth (perfect and diminished):—Suspension of sixth, fundamental and inverted, how figured:—Suspension of fourth, fundamental and inverted, how figured:—Suspensions in bass, in fundamental and inverted chords, how figured.

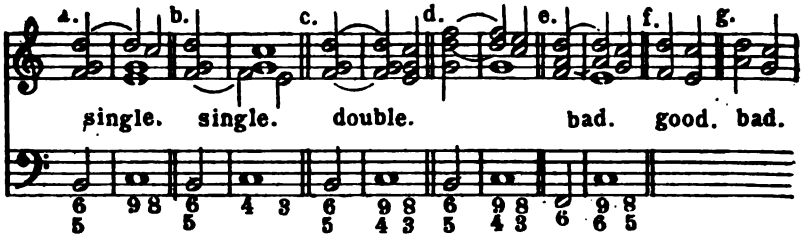
## CHAPTER XIV.

SUSPENSION (CONCLUDED). ANTICIPATION. SYNCOPATION.

We have now passed in review *every possible single suspension; that is, in a single voice.* But it is feasible to have suspension in more than one voice at a time, and we proceed to show what is possible in this direction.

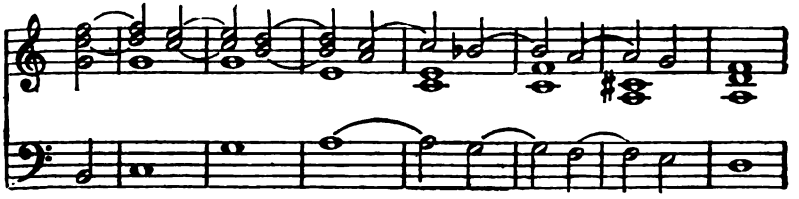
### SUSPENSION IN TWO VOICES.

In the nature of the case, the suspended voice moves *after* the others, that is, alone. If two voices are suspended, they must *move together.* Therefore any two voices, capable of proper resolution, can be simultaneously suspended, provided that they stand in *concordant relation,* so that their progression into the resolution will be agreeable. The following makes this plain:

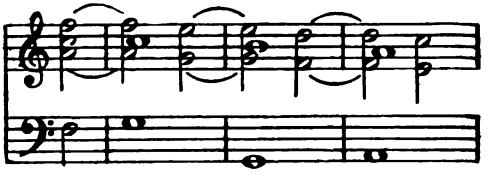



The concordant relation is necessary, because the two suspended voices are so conspicuous in their motion; as will be seen in the example, the intervals of *thirds* and *sixths* are much more harmonious than *fourths;* and our *double* suspensions are generally limited to those in which the interval is a *third* or a *sixth.*

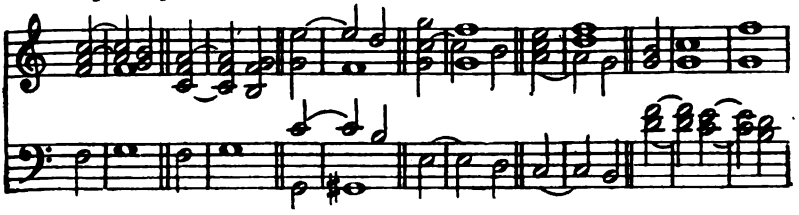
*in thirds*:



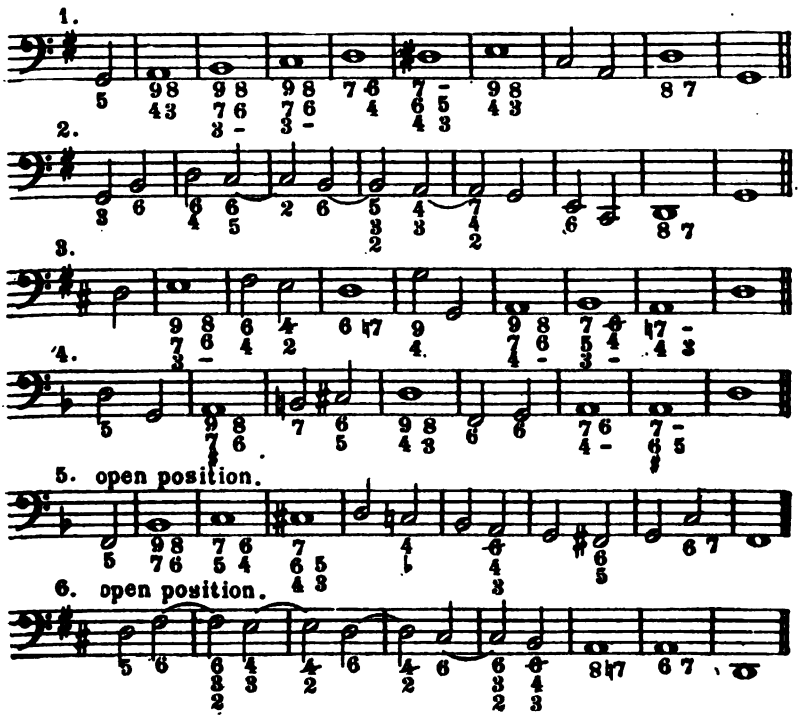
*in sixths*:



Double suspensions, with the interval of a *third* or *sixth* between the tones, are very effective in the chord of the seventh, and involve no new principle, thus:

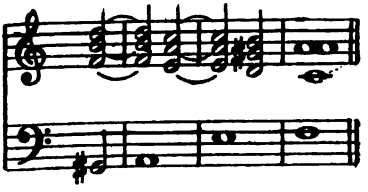


EXERCISES.

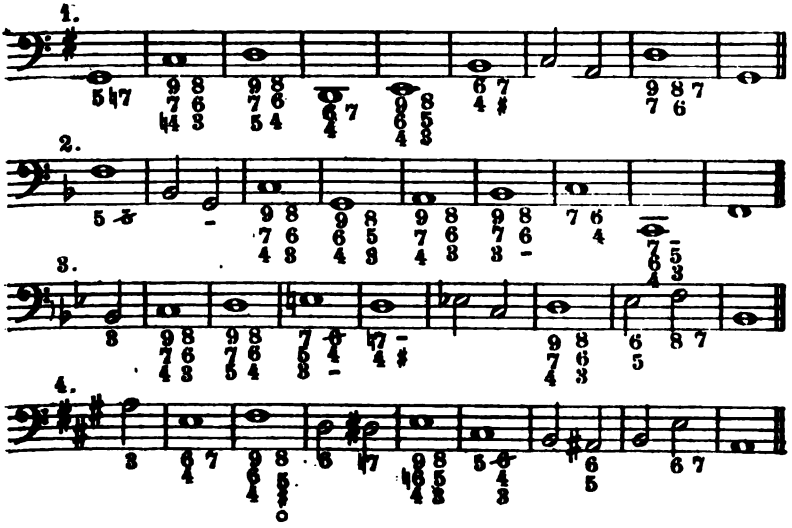



SUSPENSION IN THREE VOICES.

The usual method of employing suspension in three voices will be explained later. It is of rare occurrence, and is illustrated as follows:

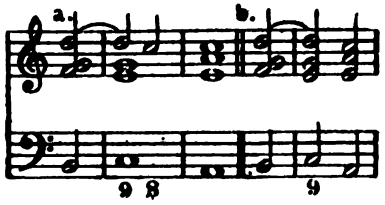


EXERCISES.

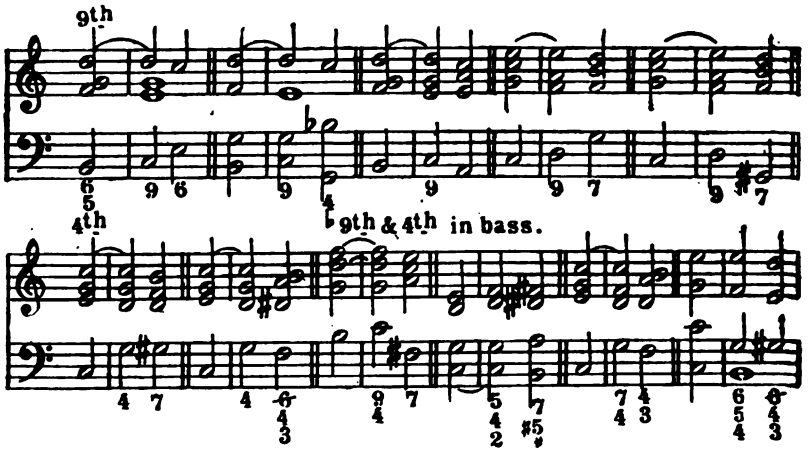



RESOLUTION OF THE SUSPENSION INTO ANOTHER CHORD.

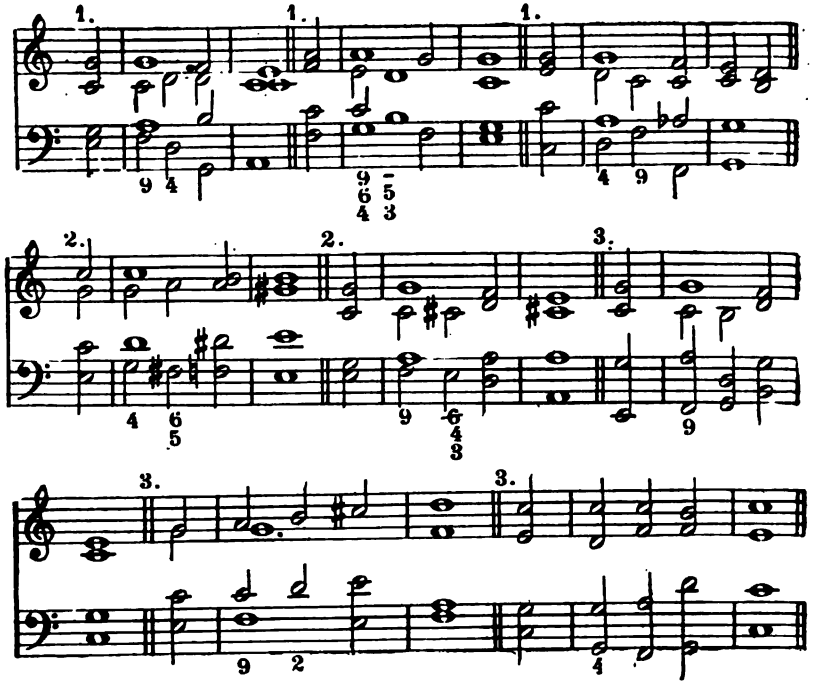
Hitherto the resolution has been into the same chord, that is, the unsuspended voices did not leave their tones until the suspension was resolved. But it is possible for the unsuspended voices also to move simultaneously with the suspended voice, so that, while the resolution is precisely the same as before, the harmony of the resolving chord is quite different, thus:



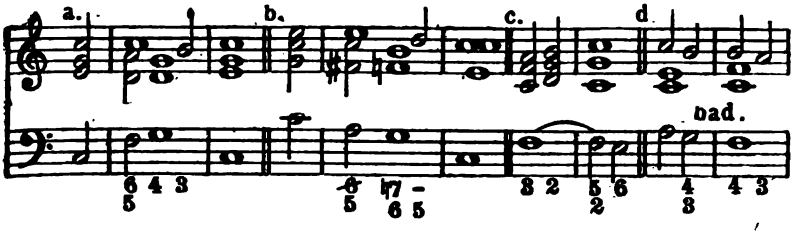

This can always be done, provided the resolving tone is an element of the new chord, and the other progressions are correct. The harmony is richer by this method, inasmuch as the effect of *three* chords is compressed into *two*, (as above). Such progressions are at first more difficult for the pupil, and it is *indispensable* that he should clearly see the suspension in the first chord, and its resolution in the second. To this end let the following example be carefully studied, in which each suspension has several resolutions.




In the same manner as the resolution of the *seventh* is occasionally *delayed* (chapter XI), so that of the suspension may be delayed, by introducing a chord in which the suspended tone is continued, but becomes (1) a *different suspension,* and is then resolved, or (2) the *seventh* of a fundamental chord. and resolves, or (3) a *concordant* element of a fundamental chord.



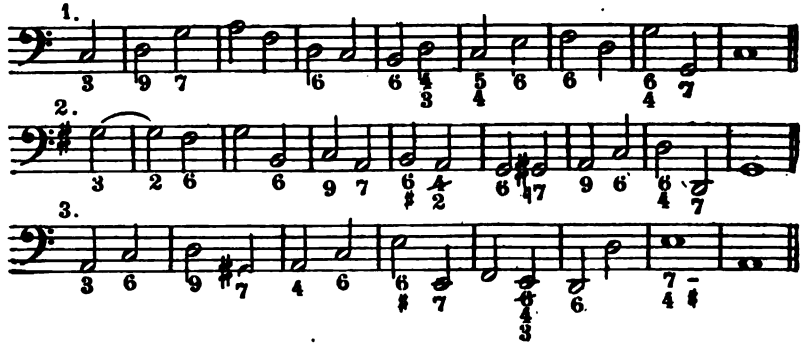
One way of delaying the resolution of the *seventh* is by introducing a chord in which the *seventh* becomes a suspension, and as such is resolved.

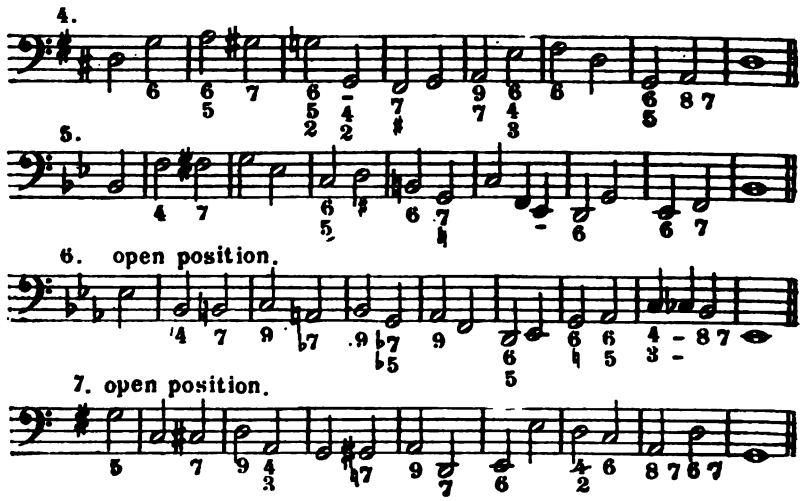



This would oftener occur in chords of the dominant-seventh or of dominant-seventh form, than in the pure secondary-seventh chords. This method of delaying the resolution of the *seventh* could not be mentioned in Chapter XI, as the nature of suspension was not yet explained.

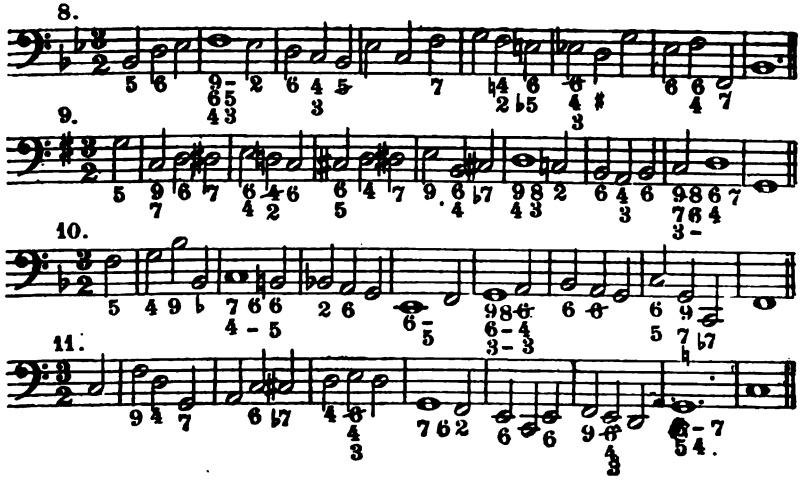
Hitherto the resolving chord has afforded the true fundamental harmony involved in the suspension-chord. But this will not be the case when the suspension resolves into a *new* harmony. To determine the fundamental harmony of the suspension-chord, it will now be necessary to combine the resolving tone with the other tones *heard simultaneously with the suspension.* In the case of the suspension of the ninth, in second inversion, when figured $\frac{6}{5}$, there will be a danger of misinterpreting it as a fundamental chord, viz., the first inversion of a seventh-chord. As a *suspension* the bass *must be doubled;* as a seventh-chord inversion there *must be no doubling,* and the chord must therefore be interpreted and formed according to the requirements of the situation. But $\frac{6}{5}$ followed by $\frac{6}{4}$ *commonly means a suspension-chord.* In the case of the full figuring $\frac{8}{6}$ there can of course be no ambiguity.

EXERCISES.

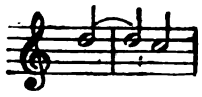





*Delaying the resolution.*

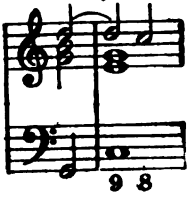



It is an interesting exercise for the pupil to ***choose for himself*** the harmony that shall accompany a given suspension. Thus, supposing the following notes represent the ***preparation, suspension and resolution in the soprano***

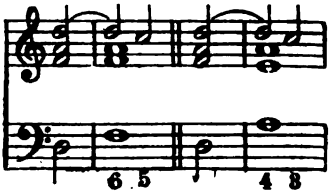


then the first chord must contain D as an element of the harmony,

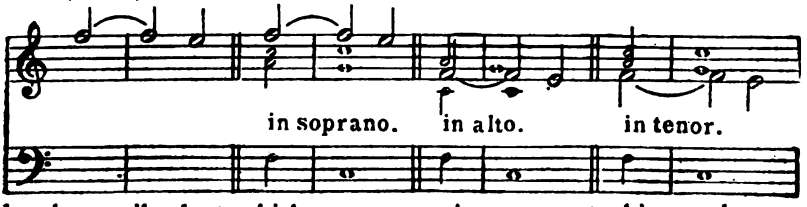
and the chord of the next measure must be such that D and C will be a *suspension* and *resolution*, thus:




We have here a suspension of the *ninth*. By changing the harmony we can have a suspension of the *sixth* or of the *fourth*, thus:

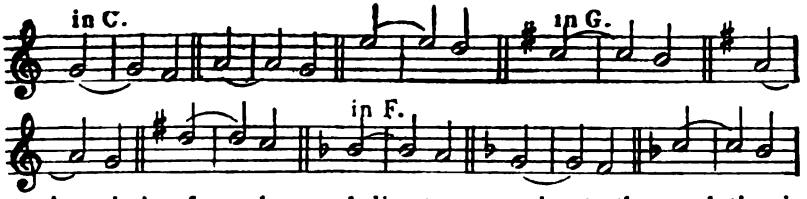



A little practice will make one quite adept in the selection of proper harmonies, and make the whole subject of suspension more clear. The following fragments are to be treated in this way, letting the given part appear in the soprano, and then transposing the parts, so that the same suspension shall appear in the alto and then in the tenor; thus,



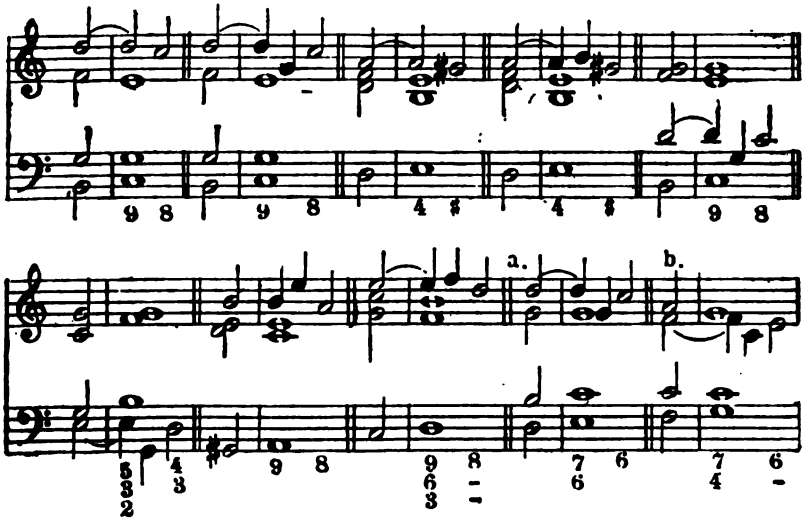

let the pupil adopt whichever suspension occurs to him, and more than one if possible. It can only be successful when the pupil *clearly hears the effect in his mind*. The teacher can protract this exercise when desirable, and much depends upon him to make it interesting.

EXERCISES.



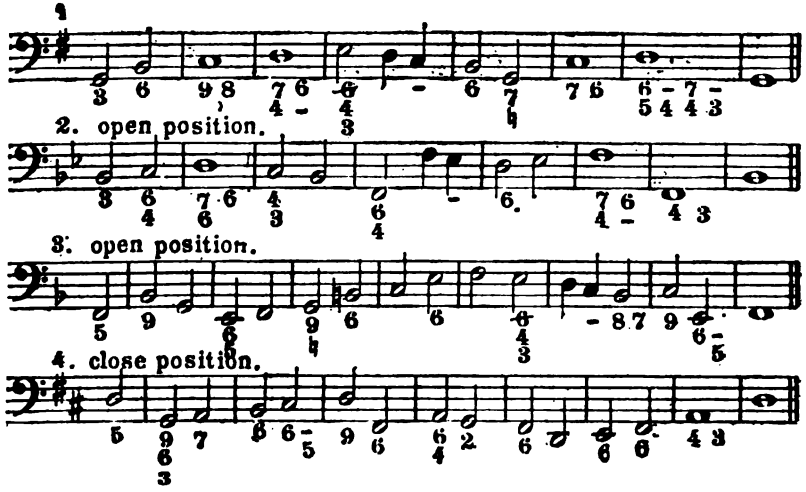

A variation from the usual *direct* progression to the resolution is that wherein the suspension-tone is shortened, and a *harmonic* tone

(either below or above) intervenes between the suspension and the resolution, thus:



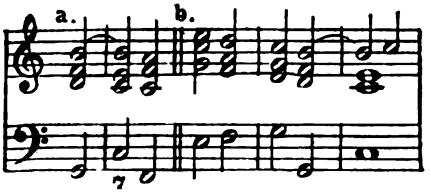

This is analogous to the movement of a voice from the *seventh* to another harmonic tone before resolution. "Open position" is more favorable for this freer movement of the voice, as a unison is less likely to occur, and yet the latter is not reprehensible (as at (a) and (b) ). The effectiveness of such a movement of the voice must be determined in each individual case. When the suspension-chord resolves into another chord, the harmonic tone to be chosen belongs, of course, to the suspension-chord. Harmonize the following in half notes, and then insert harmonic notes.

EXERCISES.



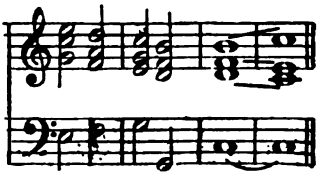
(2) RESOLUTION UPWARD.

The natural tendency of every discord is to resolve into harmony by having the upper tone *lead downward* one degree. This is clearly the instinctive resolution of the *seventh*, and of every other dissonance brought to our notice in "suspension;" and this still remains the natural resolution of every dissonance even in the present section, wherein we treat of resolution "from beneath," i.e., *leading upward*. For while the instinctive tendency remains the same as before, to lead downward, *when considering the discordant tone, simply in and of itself*, yet there are other considerations which may more than counterbalance that tendency, and require the discordant tone to lead upward. These considerations are the special requirements of the *harmony* and of the *melody*. For example,

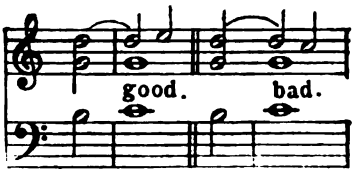



a simple seventh-chord resolves as at (a), but in a particular situation, as at the end of a composition, or of one of its sections, the *harmonic sense* will require the resolution at (b). In this case the chord of C is predetermined by other considerations.

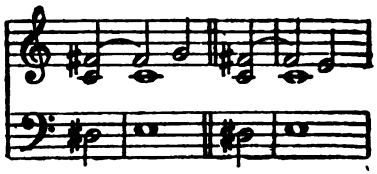
This "resolution upward" is frequently associated with "resolution downward," and affords the following effective harmony, often found at the close of a composition:



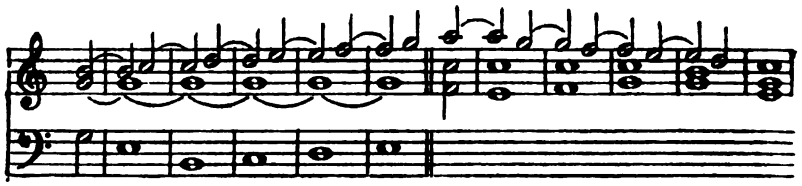
The ear prefers that the suspension should *lead up* to a tone that completes the harmony, rather than *down* into one that leaves the harmony bare, thus:



A suspension is usually *drawn upward a semitone,* rather than *downward a whole tone.*



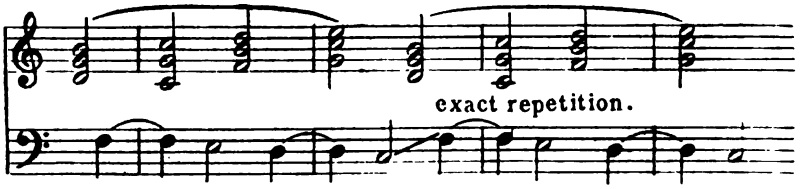
The movement of a voice having been established in a certain direction, a sort of *melodic momentum* will continue to carry the voice in that direction, either up or down.



This often accounts for the upward leading of the *seventh* in the unusual progression of that dissonance. (Exercises later.)

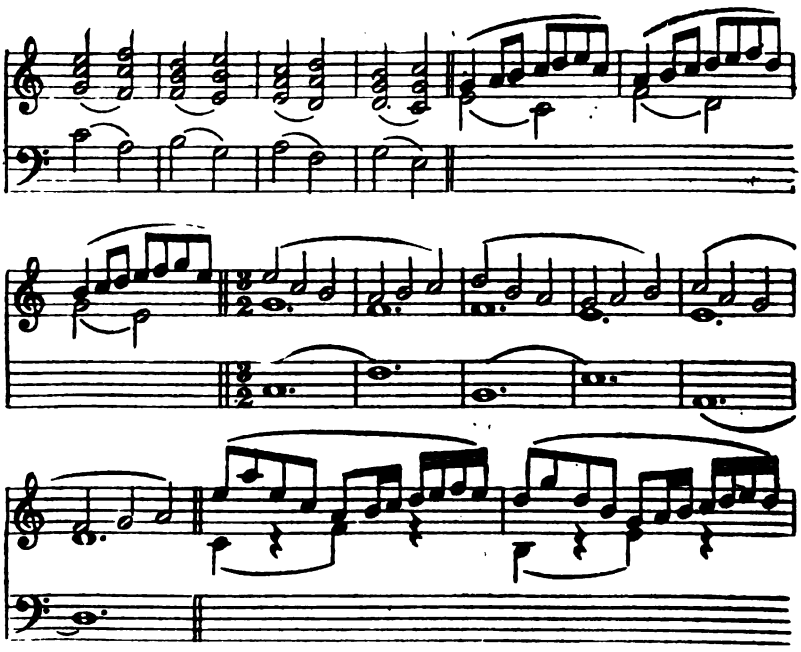
### (3) Free Resolution.

The two foregoing sorts of suspension are alike in this respect, that the suspended tone leads by *one degree,* either up or down. This strictness of resolution (by a single degree), is sometimes relaxed, *when, a movement in suspension having been established, either the exact repetition of a phrase, or else a sequence, calls the suspended voice by a skip to its original position in the harmony, thus:*



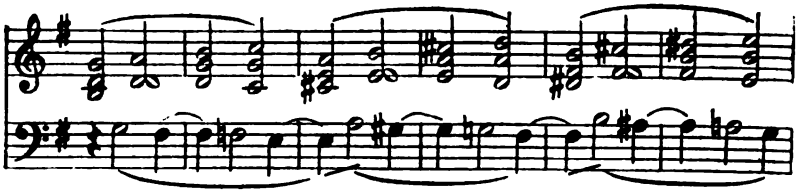

### Sequence.

The repetition of a musical phrase, at successively higher or lower intervals, constitutes a *sequence.* The phrase may be of any length, usually short, and either a single part, or harmonized in any number of parts, thus:

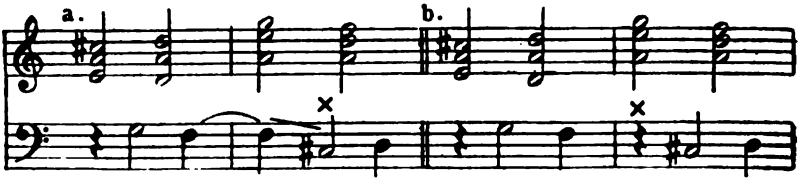


The several voices of the harmony naturally partake of the sequence character. In the practical use of sequence the given phrase rarely occurs more than three times, as, if more extended, it becomes monotonous.

The pupil can now understand the use of "free resolution" in a sequence, thus:

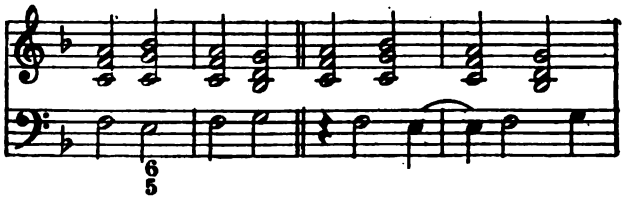


Furthermore, in the course of "strict resolution" an occasional "free resolution" can occur, when the skip is made *to reach a tone essential to good harmony, thus*:

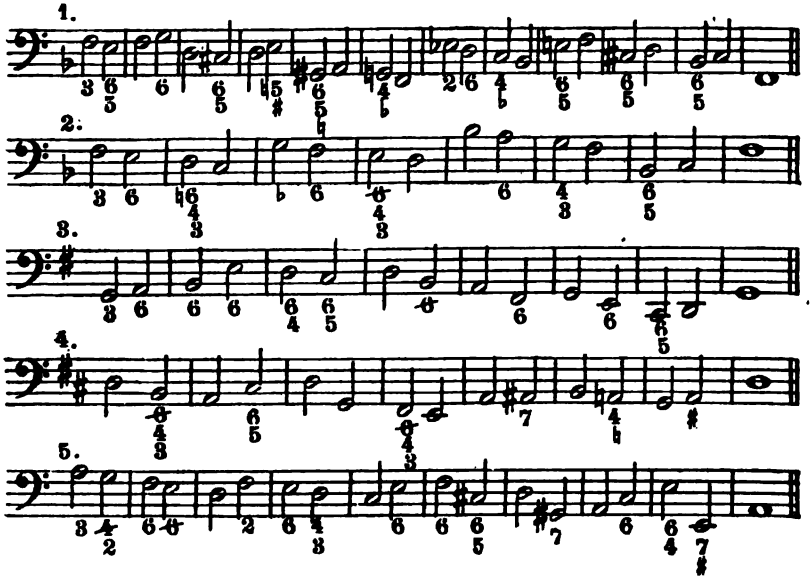


The harshness thereby resulting, as at (a), is skilfully avoided, without losing the force of the suspension, by inserting a "rest", as at (b). This device is of frequent occurrence.

Let the following exercises be first written, and then introduce suspension throughout the bass by beginning the bass on the second beat, thus;



then let the pupil note the examples of each of the three sorts of resolution. It will be observed that the third sort is of rare occurrence as compared with the others.




Re-write these exercises, and put the soprano into suspension throughout. Such a prolonged series of suspensions would usually occur either in soprano or in bass.

An effective use of all three sorts of suspension is found in *octave passages*, where the absence of harmony largely prevents dissonance, thus:

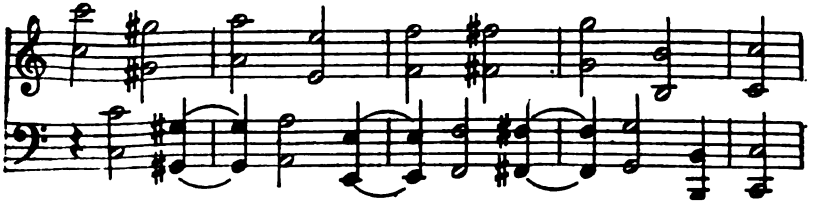
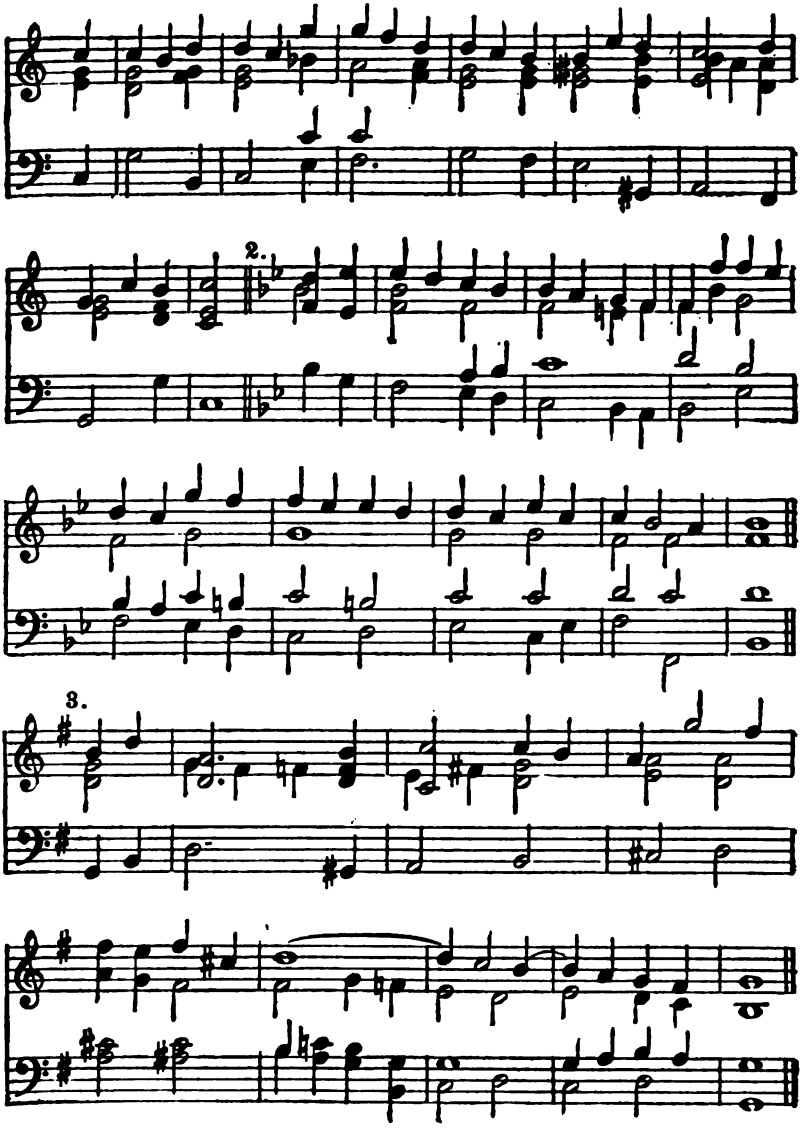
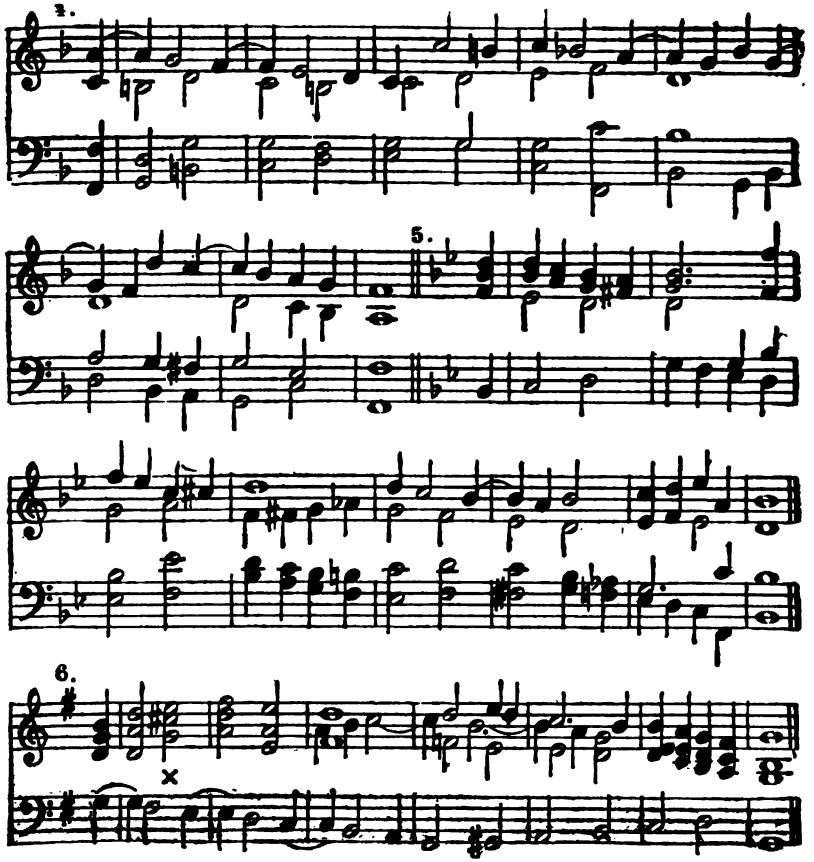
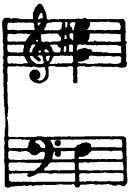


FIGURE THE BASSES OF THE FOLLOWING EXERCISES, AND ANALYZE ALL THE SUSPENSIONS.





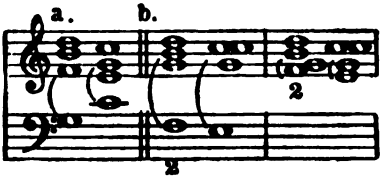

In the first measure of the sixth exercise, the third beat may perplex the pupil



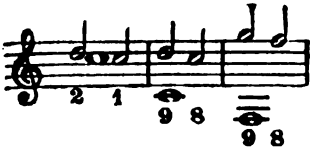
in deciding whether the figuring shall be $\begin{matrix}9\\7\\\sharp\end{matrix}$ or $\begin{matrix}7\\\sharp\\2\end{matrix}$, i.e., whether the interval between bass and tenor shall be expressed by 9 or by 2. As similar cases are likely to occur, the distinction between a *ninth* and a *second* needs to be a little more fully explained.

Essentially, a *ninth* and a *second* are alike, and ordinarily all intervals are reckoned as being within the limits of an octave. In the case of every discord the ear demands a compensation by having

the two voices in discord move into concordant relation, generally by the upper or the lower voice moving down one degree.




In the case of a *second*, resolving into *unison*, there cannot be said to be a concordance compensating for the discord, as when a *ninth* resolves into an *eighth*,

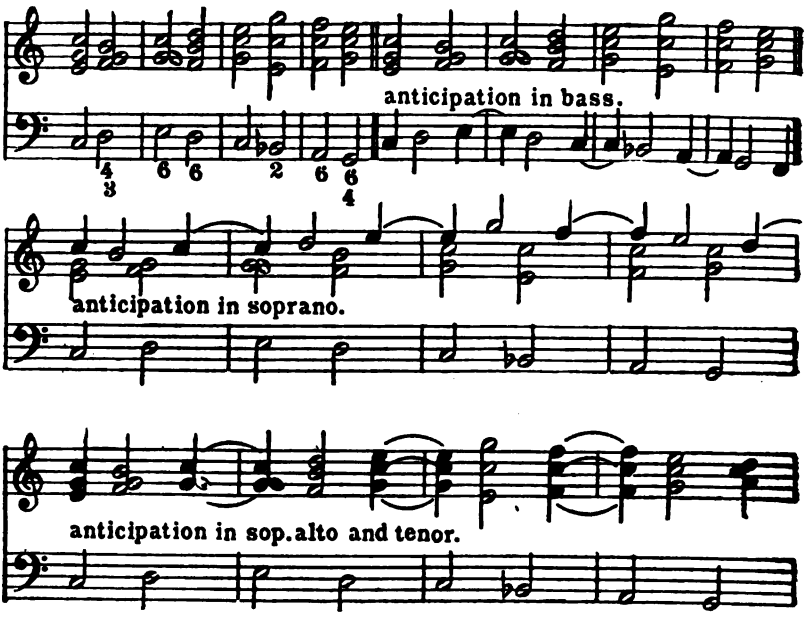



and even the latter hardly affords adequate compensation. Accordingly in such a resolution as in the last example, figured 9 8, more than an octave must intervene between the voices, that the resolution may be into an *octave*, and not into *unison*. But where the lower voice moves away from the upper (as at (b) above), the concordance is secured without the octave distance, and such an interval would be called a *second*.

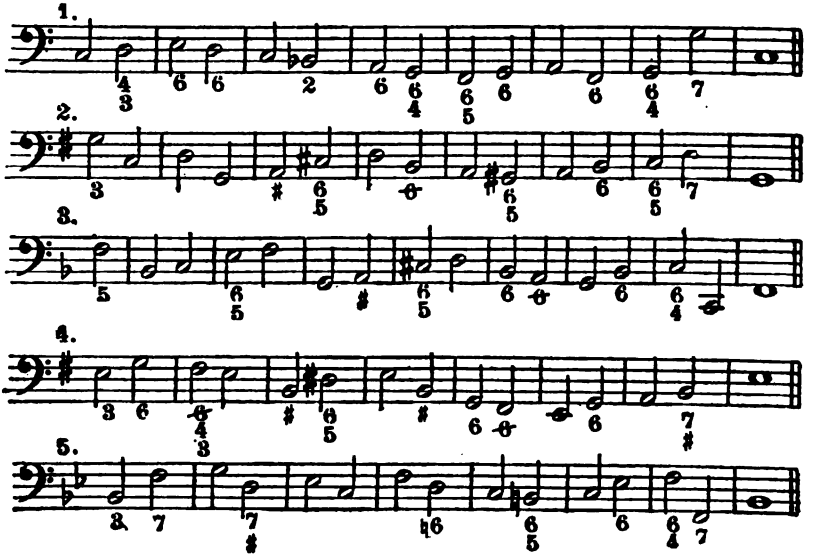
### Anticipation.

The exact opposite of suspension occurs, when the voice, instead of *delaying* upon a tone of the previous harmony, *anticipates* its tone in the following harmony, by taking it before the other voices move. In Anticipation as in Suspension, the voice thus moving usually does so *by a single degree*, up or down, and rarely *by a skip*.

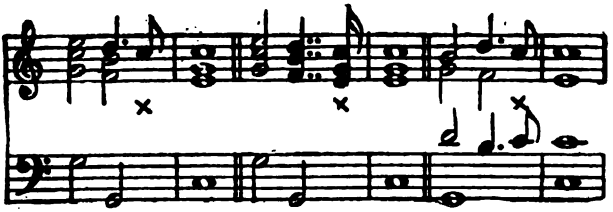
In the following exercises let the *anticipation* be introduced in three ways; 1st, in bass; 2d, in soprano; 3rd, in the three upper parts simultaneously, each exercise being first simply harmonized. The first four measures of the first exercise are here given in all the ways, as illustration.




EXERCISES.




Anticipation rarely occurs where the tones are of long duration, as the discordance would not be endurable. It often appears in such manner as the following:

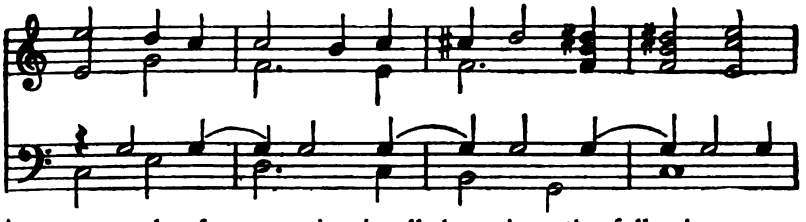


It will be seen that all cases of Suspension and Anticipation are reducible to simple normal harmonic progressions.

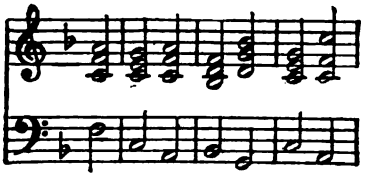
### SYNCOPATION.

This is closely allied to Suspension and Anticipation, yet can be easily distinguished. The characteristic element of Suspension and Anticipation is the discordance produced by the mixture of elements of two chords, in which is involved the *rhythmical displacement of* the suspending or anticipating voice, which thereby is made to strike on the unaccented parts of the measure, while the other voices strike on the accented parts.

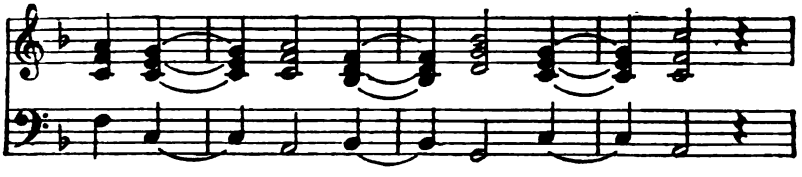
The characteristic element of syncopation is the *rhythmical displacement,* such as is found in suspension, but *usually without the discordance* that comes from a mixture of chords. A common instance of syncopation is that wherein a single voice reiterates the same tone, common to several successive chords, but striking on the unaccented beats; thus, in the tenor:



As an example of syncopation in all the voices, the following

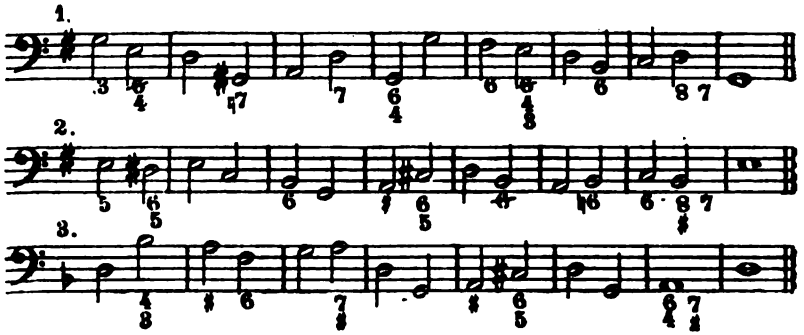


appears thus:



In such cases the syncopation may also be explained as *either anticipation or suspension in all the voices.*

SIGHT-READING.



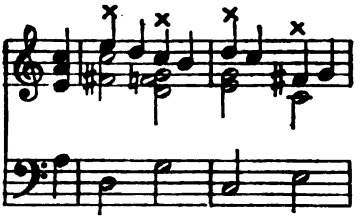
SUMMARY.

When suspension can occur in two voices:—Why concordant relation of the two voices is necessary:—The usual intervals between two suspended voices:—Double suspensions effective in seventh-chords:—Triple suspensions:—Resolution of suspension into another chord:—When possible:—Why effect is richer:—How resolution of suspension can be delayed:—When thus delayed, what the suspended tone becomes:—How resolution of a *seventh* may be delayed:—In what seventh-chords the delay is most likely to occur:—Interpretation of the $\frac{6}{5}$ chord:—Variation from *direct* resolution of suspension:—Natural tendency of every discord:—Three kinds of resolution:—What considerations necessitate an occasional "resolving upward":—Four situations mentioned where upward resolution is expected:—Combination of upward and downward resolution:—Resolution heretofore by one degree:—Explain "free resolution":—Define sequence:—Distinction between *ninth* and *second*:—Define anticipation:—Progression usually by a single degree:—Syncopation, as contrasted with suspension and anticipation.

## CHAPTER XV.

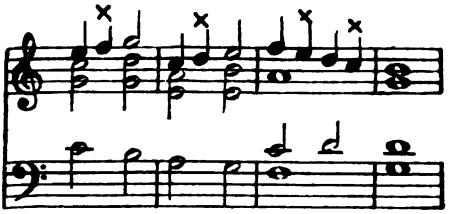
### AUXILIAR TONES.

An auxiliar tone is one that is foreign to the fundamental harmony in which it occurs, being either *prepared*, as in Suspension, or entering *freely*, that is, *without preparation*, thus:

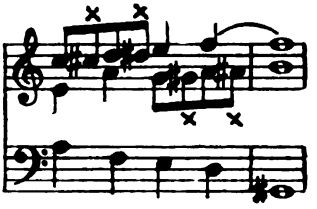


It is of the latter sort that we are now to speak. It is evident that every such tone must stand in such relation to the harmony in which it occurs that, though foreign to it, it shall not seriously disturb the harmony; and the auxiliar tone must be very subordinate. These auxiliar tones are of several sorts, and may be classified as follows:

1st. *Those which fill out the interval between two harmonic tones in any voice, and occur on the unaccented parts of the measure,* thus:

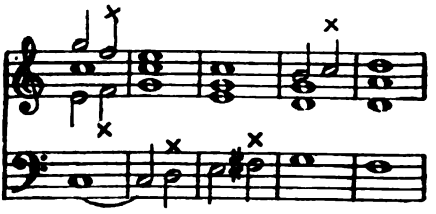


This sort of auxiliar tones may be diatonic, as above, or chromatic, thus:

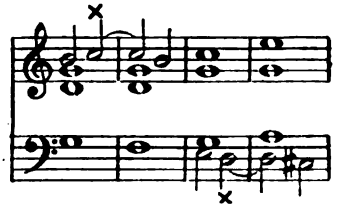


These chromatic tones, however, may often be regarded as strictly harmonic, as in the above example; but in many cases they are purely auxiliar.

Such tones, filling up the spaces between the harmonic tones, are called *passing tones,* and are the most frequent of all auxiliar tones. They are also the least conspicuous, because they occur on the *unaccented* parts of the measure. Being the least conspicuous, from their unaccented position, and their diatonic (or chromatic) progression, they sometimes occur in a *half-note* movement, but usually in more rapid tempo:



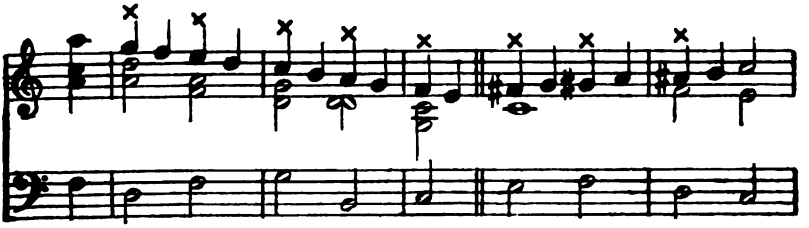
It will be readily seen that such an auxiliar tone cannot be used as the preparation of a suspension, thus;



and it may be said, in general, that *the preparation of a suspension must be a fundamental-harmonic tone.*

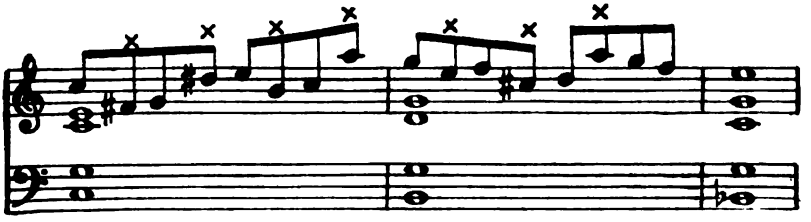
More noticeable are auxiliar tones of the next class:

2d. Those which occur diatonically (sometimes chromatically) *on the accented parts of the measure, and simultaneously* with the harmonic tones, thus:



Still more conspicuous are

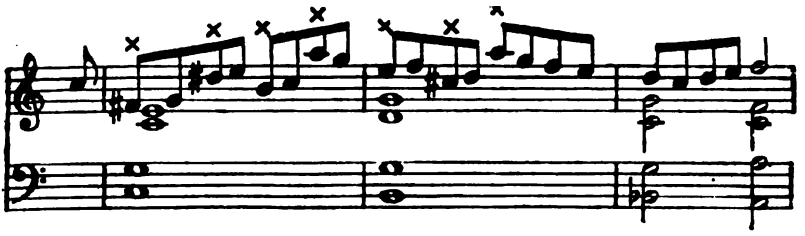
3rd. *Those which appear by a leap, on the unaccented part of the measure;* in which case they must move *by a degree* up or down to a harmonic tone, thus:



The abrupt effect of these tones entering by a leap must be counterbalanced by a shorter duration of the tone.

And the last class of auxiliar tones are

4th. Those which appear by a leap on the *accented parts of the measure,* thus:



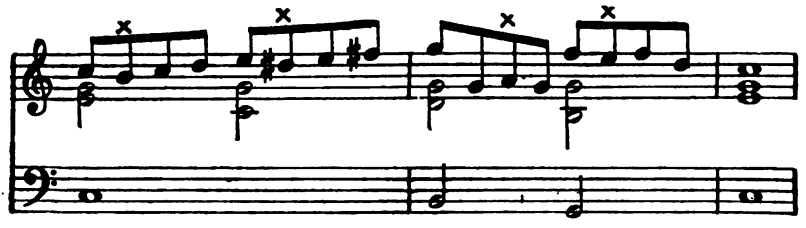
In this case, when the auxiliar tone is *below* the harmonic tone, it is better to be distant only a *minor second,* using an *accidental* if necessary; when *above* the harmonic tone, it can be at an interval of either a *minor* or a *major second,* according to the location in the scale. This is because a dissonance naturally leads downward, and if it is to lead upward, it will do so more easily if its motion is only a semitone.

The foregoing classification of auxiliar tones will be easily remembered when stated thus:

(1) unaccented, diatonic or chromatic
(2) accented, " " "
(3) unaccented, by a leap
(4) accented " " "

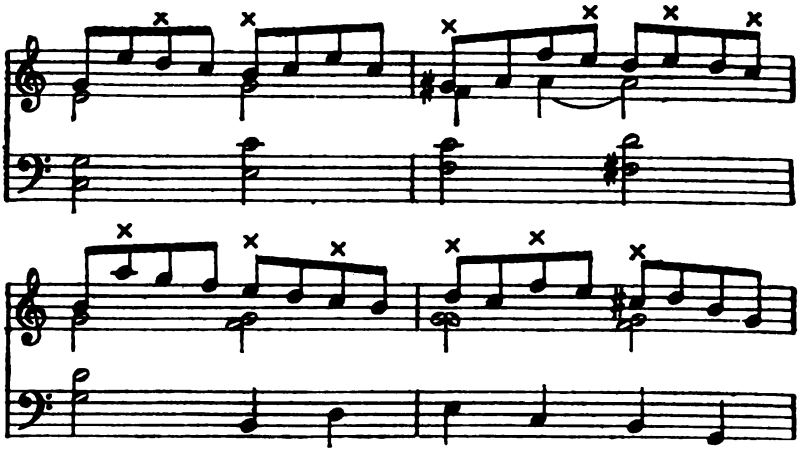
and successively more conspicuous in this order.

Such auxiliar tones as are marked x in the following example may be called auxiliars of the 1st class, but they are not, strictly speaking, *passing tones,* as the harmonic tones between which they stand are identical:

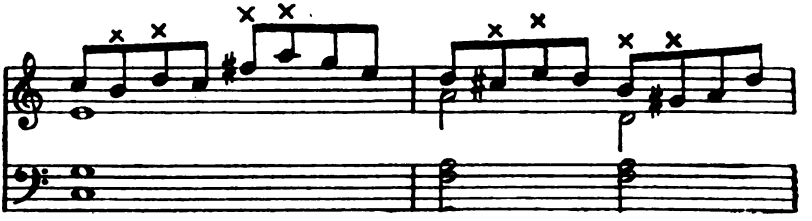


Still, being diatonic and unaccented, they belong properly to the 1st class.

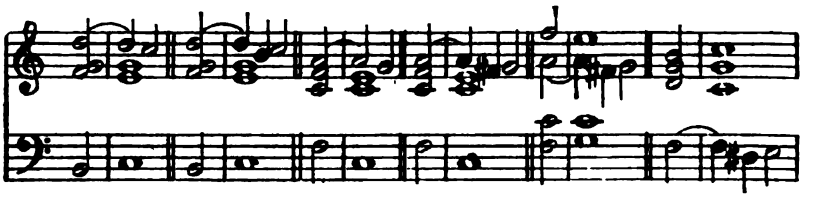
Let the pupil assign each of the following auxiliar tones to the proper class. The notes not marked are all harmonic notes.



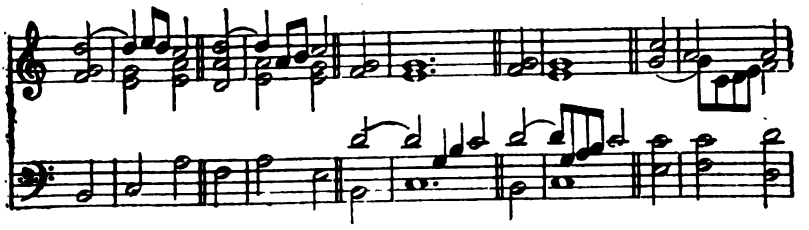
As a rule, the auxiliar tone leads *at once* to the harmonic tone; but two auxiliar tones can be used together *when both lead naturally* to the same harmonic tone, thus:



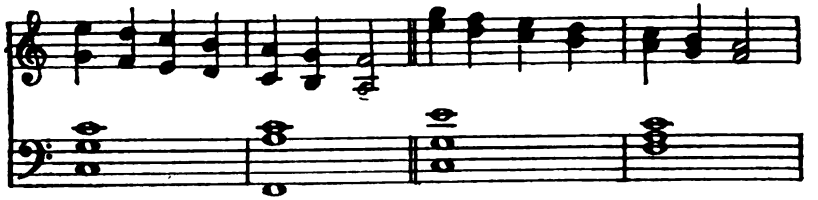
An auxiliar tone can be inserted between a *suspension* and its *resolution,* similarly to a harmonic tone (see page 110), *when the auxiliar tone leads diatonically to the resolution:*



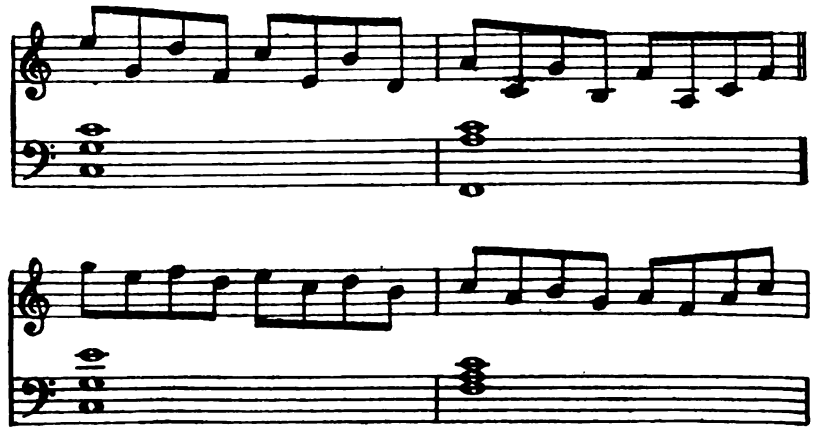
Also an auxiliar and a harmonic tone can be conjointly inserted before the resolution, or even two auxiliar with the harmonic tone, when necessary in order to reach the resolution diatonically:



When two voices move diatonically in *sixths* or *thirds* as follows,



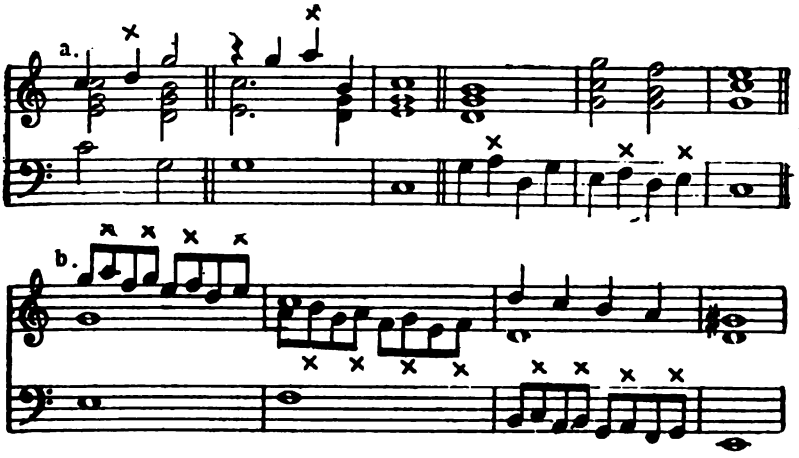
it is a simple case of "passing tones" in each voice. But as an *instrumental* effect, a *single* part or instrument may take all the above tones, thus,



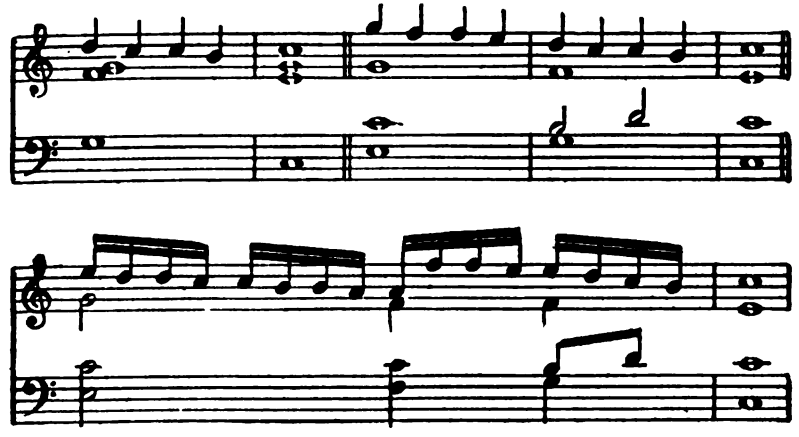
in which not the *adjacent* but the *alternate* tones are thought of, in their relation to each other. It is a *double* melodic progression, and such a part may be called a compound part.

In the several cases before mentioned, the foreign tone was one degree distant from the harmonic tone that *followed* it. A less frequent use of the foreign tone is that in which it is one degree

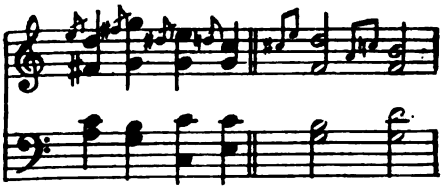
distant from the harmonic tone that *precedes,* and is followed by a *skip* to another harmonic tone, thus:




Progressions similar to the last illustration (b) are not so uncommon. The close diatonic relation to the preceding harmonic or passing tone seems to be the justification of this sort of foreign tone. A slight variation of the above is where the foreign tone is repeated, which sometimes has the effect of a *suspension prepared by a foreign tone,* and is admissible only in the more rapid movement of quarter, eighth, or sixteenth notes. It is like a *prolonged* single auxiliar, or like two auxiliar tones drifting to the same harmonic tone.



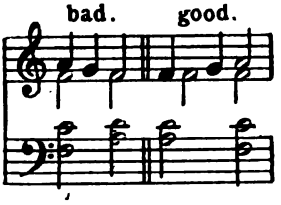
*Grace notes and Appogiaturas*



are simply auxiliar tones of very short duration, used according to the previous rules.

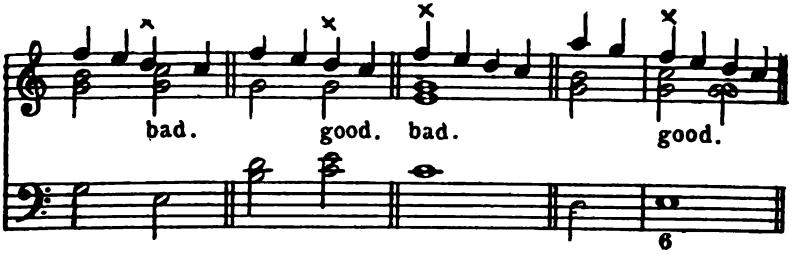
The foregoing, together with Anticipation and Suspension, explains all the varieties of foreign or auxiliar tones. The following exercises are designed to give a practical acquaintance with the several varieties, and are preceded by a few special suggestions.

In the use of *passing tones* it is better to move *away from* a unison than *into* unison, thus:

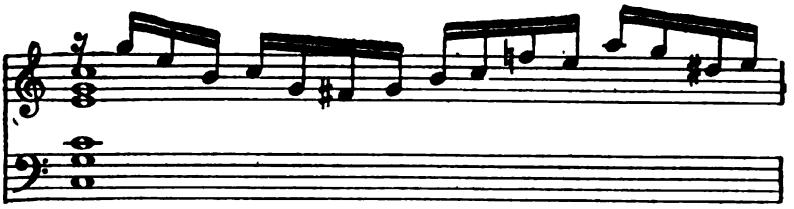



The reason seems to be that the ear requires to be compensated for a discord between two voices by a harmony of the same voices, which it fails to get when the voices proceed to a unison.

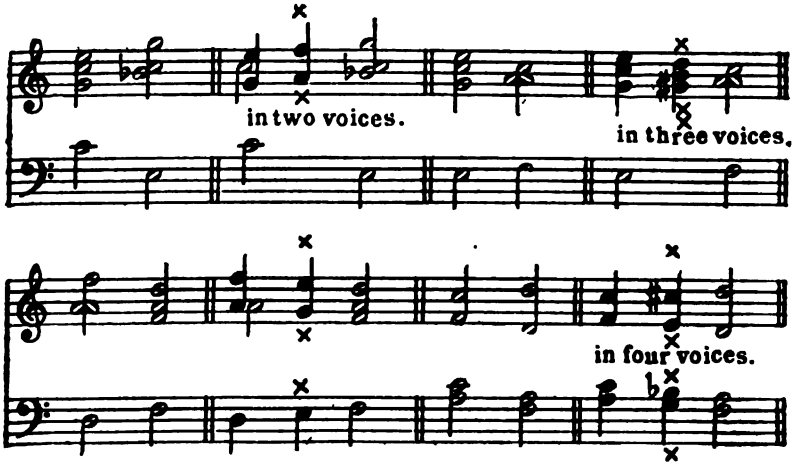
Except in rapid movement, the harmonic tone into which an auxiliar tone leads should not be heard in any other voice simultaneously with the auxiliar tone, except at an interval of one or more octaves; and even then it is not well to have the *third* in the chord heard at the same time with the auxiliar tone adjacent, excepting when the *third is in the bass,* i.e., in a *chord of the sixth.*



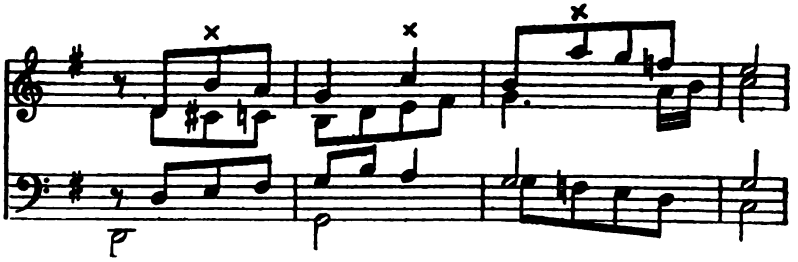

With a rapid movement, and especially with fuller harmony (frequently in instrumental music) this prohibition is not enforced.



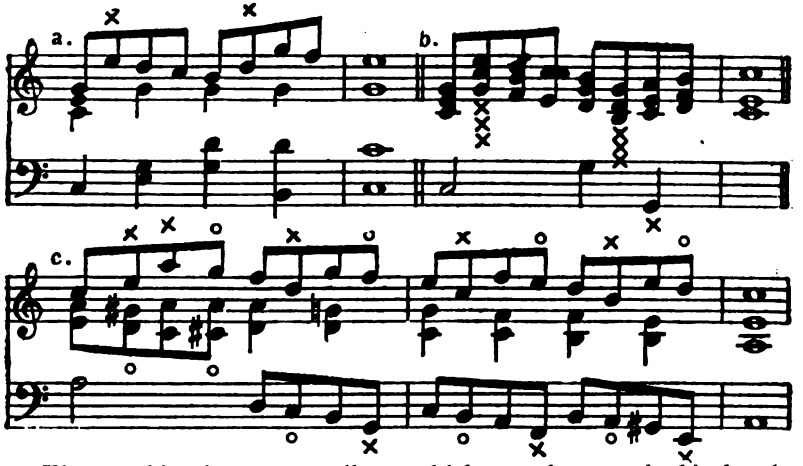
We are not limited to *single* auxiliar tones. They may occur in two or more voices, and produce a great enrichment of the harmony. They may be in parallel or in contrary motion, and of the several varieties of auxiliar tones simultaneously.



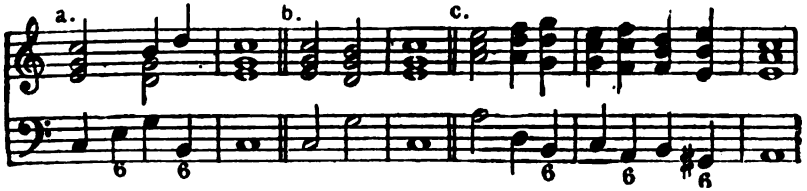

In the above examples the foreign tones are all "passing tones." It is more usual to combine a "passing tone" in one voice with a foreign tone of another variety in another voice, thus:



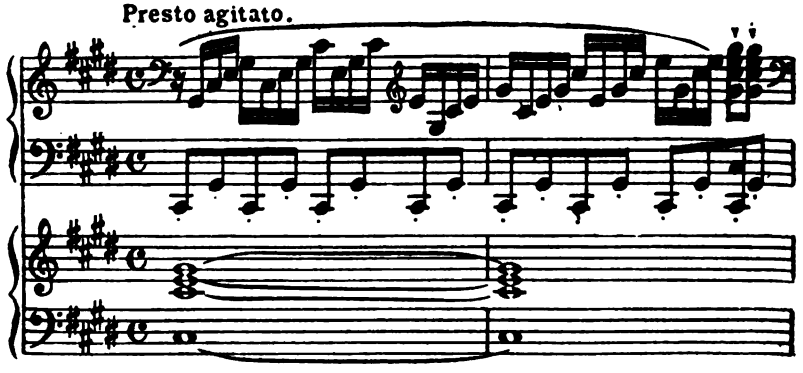
The use of "harmonic tones", in which any voice passes from one tone of a chord to another tone of the same chord, either singly or combined with other harmonic or foreign tones in other voices, is always admissible, thus:

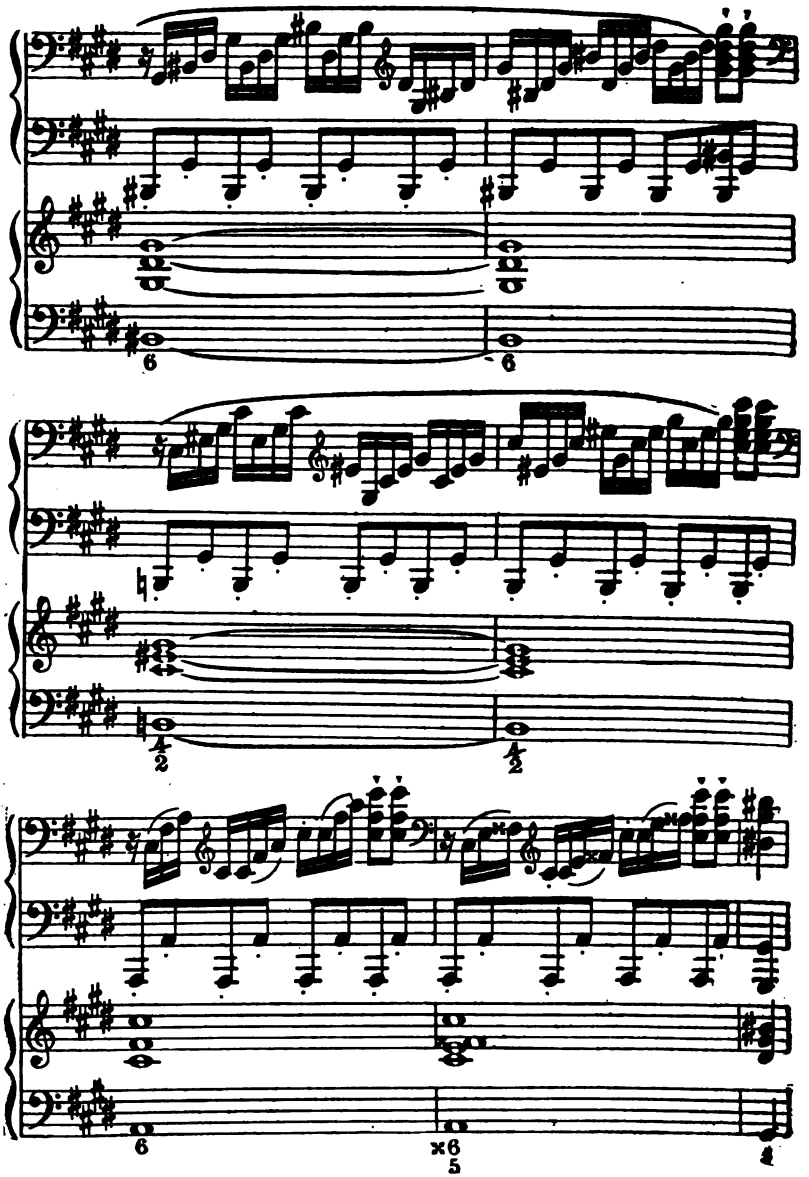



The combinations are endless which are thus attainable by the use of harmonic and auxiliar tones. The simplest flow of harmonies can thus be amplified into the most elaborate and masterly composition, which will yet be readily understood by the listener, because all this elaborateness is as it were merely a beautiful veil which only half conceals the simple underlying harmonies. Thus the above examples rest upon the following simple chords:




*The intelligibility of an elaborate composition is proportional to the simplicity of its fundamental harmonies.* This is strikingly illustrated in the opening eight measures of the last movement of Beethoven's Sonata Op. 27, No. 2, the first six measures containing only *three* different basal harmonies, and *all* the tones being "harmonic," without a single "auxiliar."





This matter of fundamental harmonic simplicity will be alluded to again later.

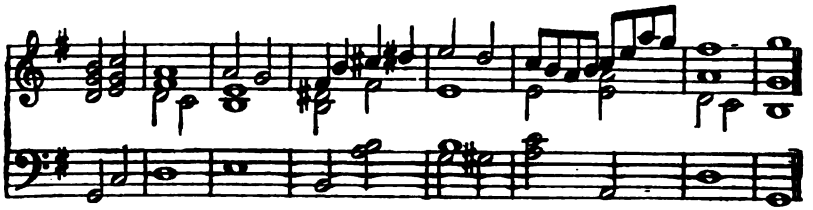
The following exercises are first to be harmonized simply, as heretofore, and then made more elaborate by the use of auxiliar tones. Let all the exercises first be written with only the embellishment of *passing tones,* in whatever voice effective, and let them also

be introduced in the bass. Then re-write all the exercises, using the auxiliar tones of the 2d, 3d, and 4th sorts wherever possible, *but only where the effect is made more musical thereby*, and noticing carefully which sort of auxiliar tones is used each time. Be careful that the embellishment *be not confined to any one voice, but distributed among them all.*

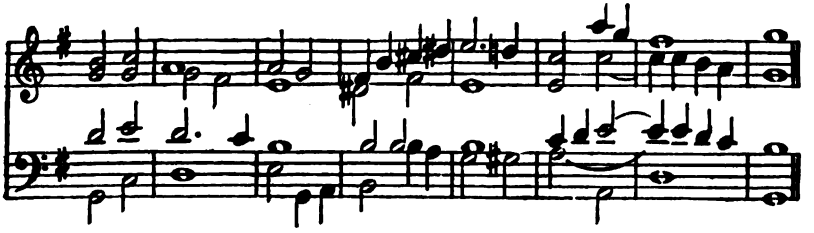
Attention must also be given to the following:

### Uniformity in the Rhythmical Movement.

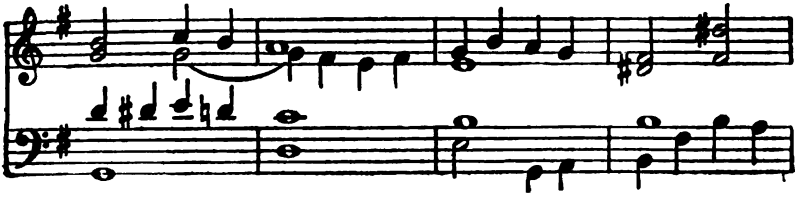
Every composition, and these exercises as well, must have a certain *uniformity in the rythmical movement.* Thus, if the movement be mainly in *half* notes, the steady current of this movement would be much disturbed by having, now and then, a whole measure filled with *eighth* notes, thus:

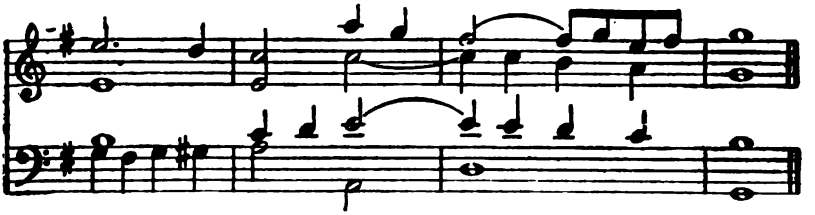


There is no regular flow in the foregoing, because the different currents, in half, quarter, and eighth notes, conflict with each other. It would be better as follows:



If the current start in quarter notes, this movement must predominate throughout, with only very occasional half or eighth notes, thus:

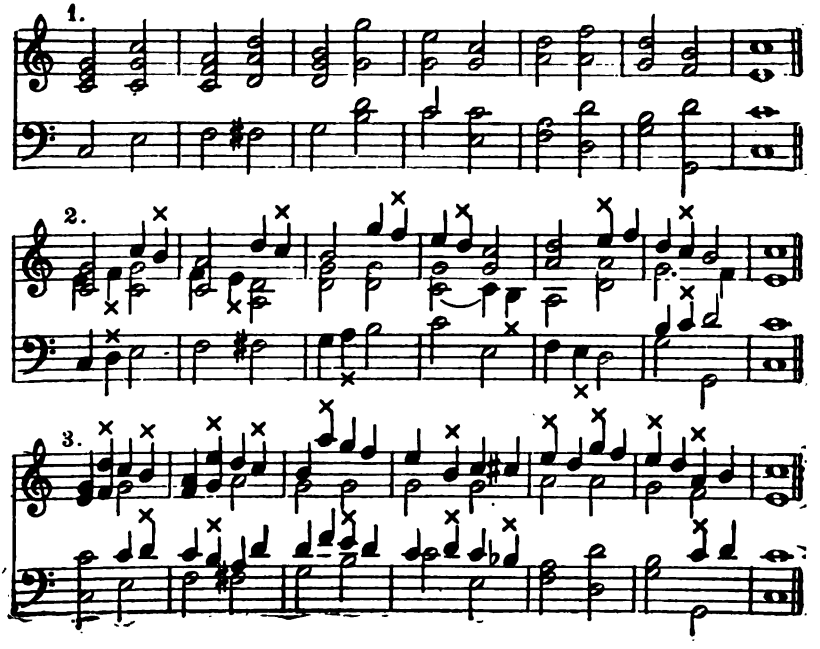


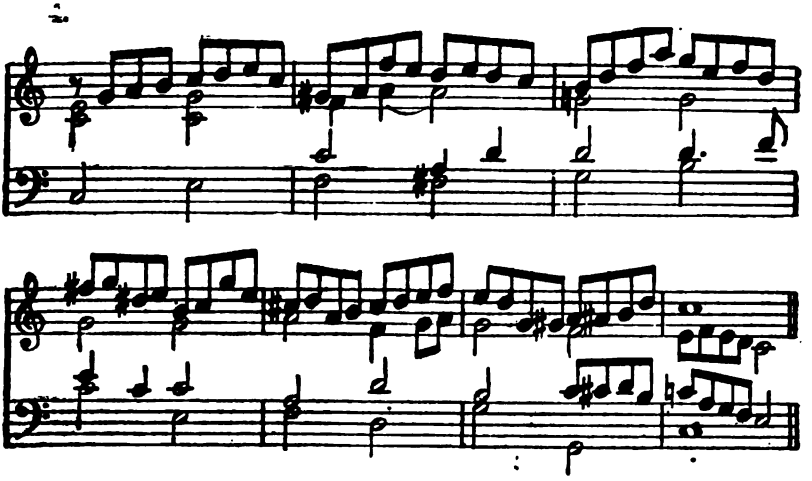


If there be any noticeable change in the rapidity of the movement it must be from slower to faster, which will give a climax to the movement, whereas from faster to slower will produce stagnation. The exact degree of needful uniformity in the movement can never be prescribed—it must be *felt*. The foregoing suggests the essential points in the matter.

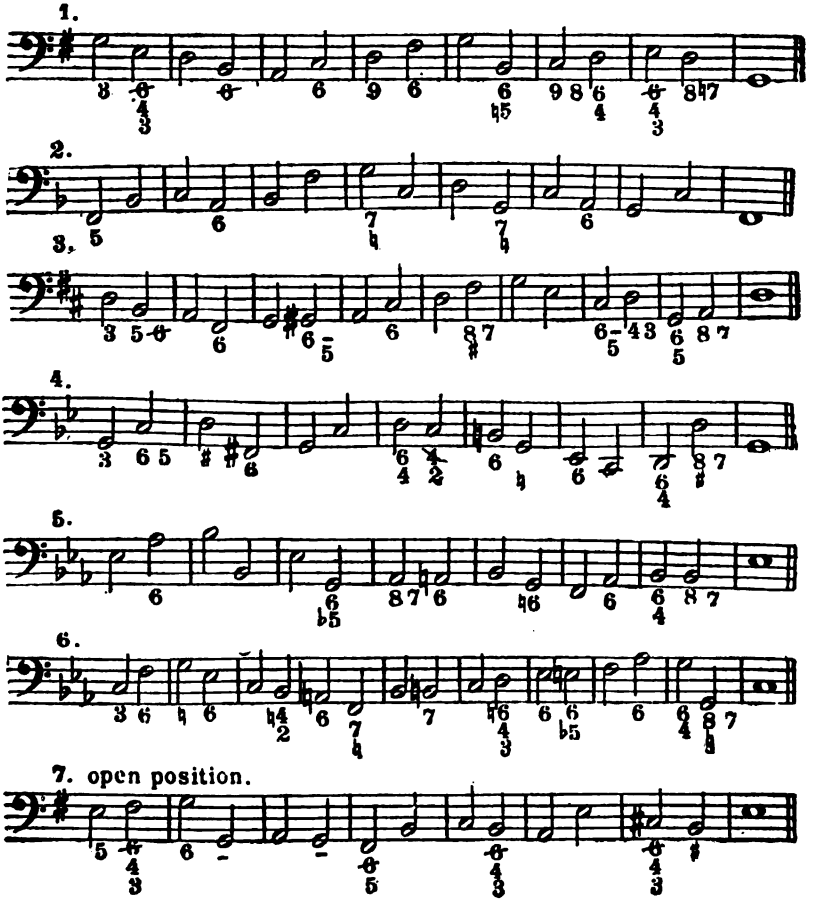
These exercises, faithfully studied, will prove the most interesting thus far, and can be re-written several times by altering the position of the upper voices through the use of harmonic tones. In addition to the writing of the exercises, the student is earnestly advised to study the work by J. S. Bach entitled "371 vierstimmige Choralgesange" (Breitkopf and Härtel) to learn how harmonic and foreign tones are used in strict four-part harmony by that greatest master of the art.

ILLUSTRATION.

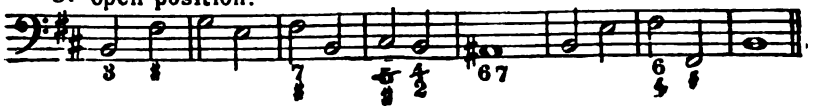




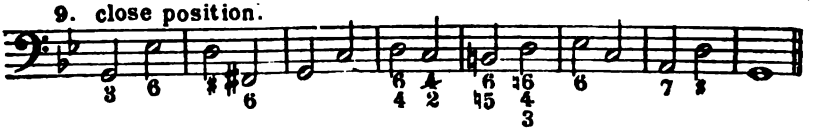
EXERCISES.



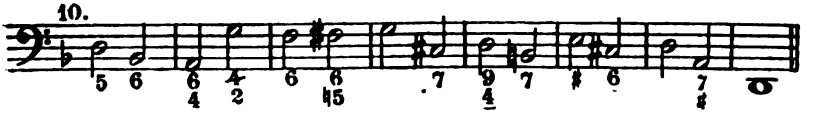
8. open position.



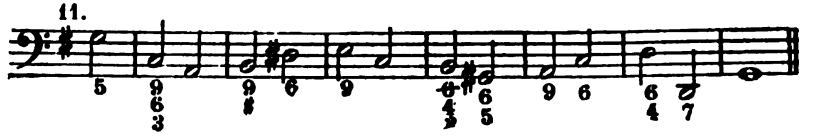
9. close position.



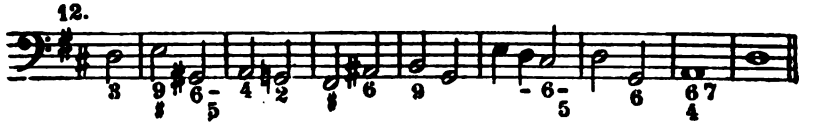
10.



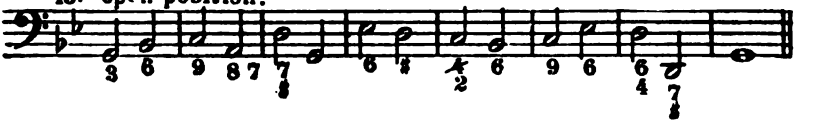
11.



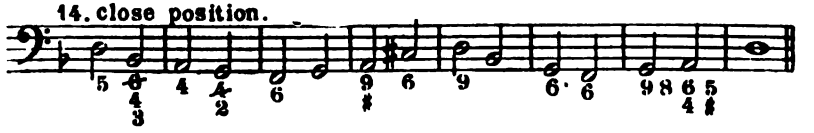
12.



13. open position.



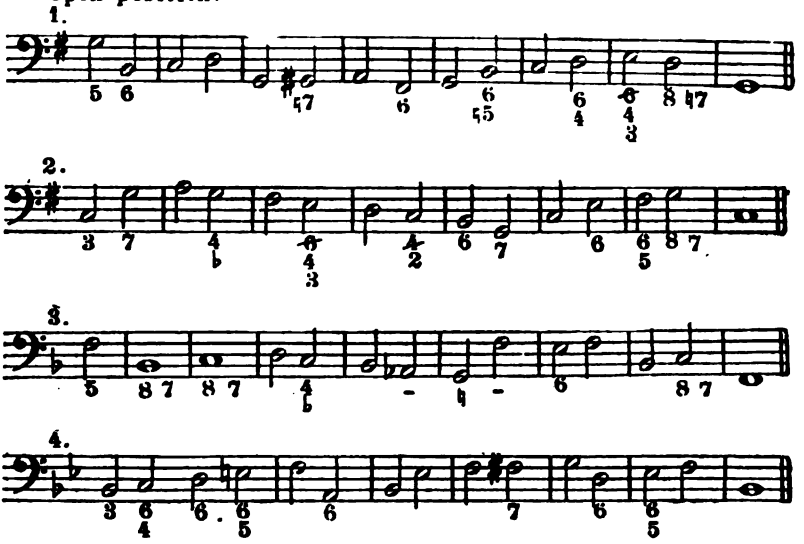
14. close position.



The above exercises admit of great variety in the harmonizing, so that each can be written in several ways. The pupil is advised to exercise all his ingenuity in the use of foreign and harmonic tones in the different voices, with suspensions, so as to acquire a fluent use of elaborate and yet natural harmonies. If further exercises are desired, the pupil can make use of any of the basses previously given in this work. Open position will be found far more favorable for the free movement of the inner voices, and the judicious alternation of close and open position will secure the most satisfactory musical results.

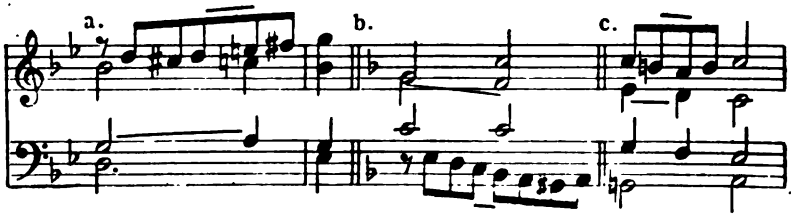
SIGHT-READING.

Open position.



PARALLEL PERFECT FIFTHS.

The progression of *parallel perfect fifths,* which is invariably prohibited in *fundamental* harmonies, is occasionally admissible when one or both of the tones forming them are auxiliary and of short duration, the effect in such case being so transient and incidental as to be hardly appreciable, while the avoidance of them might be at the expense of a smooth and natural progression of the voices, thus:




SUMMARY.

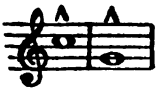
Auxiliar tones; unprepared auxiliar tones classified into (1) unaccented diatonic, (2) accented diatonic, (3) unaccented skipping, and (4) accented skipping:—Preparation of suspension must be what:—Two auxiliar tones in succession:—Suspension followed by auxiliar tone:—Meaning of a "compound part":—An auxiliar tone having its relation to a *preceding* harmonic tone:—Grace notes and appogiatures:—Moving from, not toward, a unison:—An auxiliar

and its following harmonic tone not to be heard simultaneously:—Auxiliars in two or more voices:—Harmonic tones how used:—Uniformity of rhythmical movement:—Allowable parallel perfect fifths.

## CHAPTER XVI.

### Rhythm. Primary, Secondary, and Auxiliary Chords.

*Rhythm is accentuation occurring at equal intervals.* It is the *pulse* or *beat* of music. The interval between any pulse and the next succeeding pulse is measured off by what is termed in music "the measure;" the pulse or beat occurring at the beginning of each measure. The interval of time between two successive pulses may be long or short, but it must in general be uniform throughout the given composition. A "whole note" as its name implies, normally fills the measure, i. e., expresses the duration from one pulse or emphasis to the next. But the emphasis, strictly speaking, can be made apparent only by the contrast of emphasized and unemphasized tones. If two whole tones succeed each other,



the beginning of each measure has an emphasis, but it can be made apparent only by intermediate tones receiving no accent; thus,

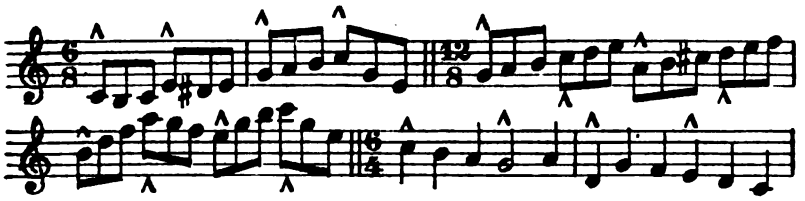
There are two generic sorts of rhythm, the *double* and the *triple* rhythm, according as *one* or *two* subordinate beats occur between the accents; the first called double, because every second beat is accented; the other called *triple*, because every *third* beat is accented. The following illustrates triple rhythm:

The varieties of double rhythm are expressed by the following figures; $\frac{2}{2}$ (or ¢) $\frac{4}{2}$, $\frac{4}{4}$ (or C) $\frac{2}{4}$, $\frac{4}{8}$.

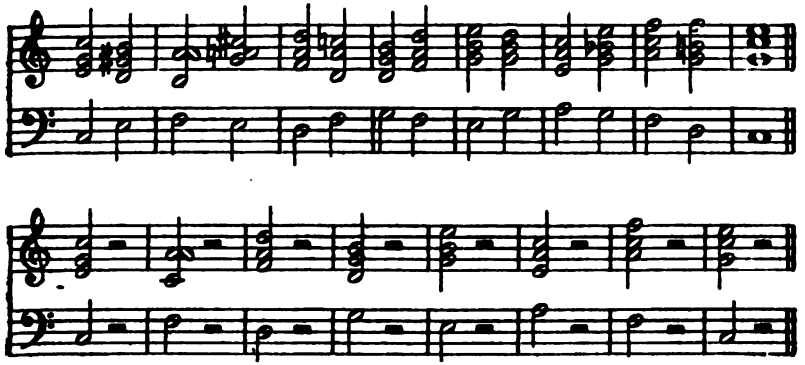
The varieties of triple rhythm by the following figures;

$$\begin{matrix} 3 & 3 & 3 & 6 & 9 & 12 & 6 \\ 2 & 4 & 8 & 8 & 8 & 8 & 4 \end{matrix}.$$

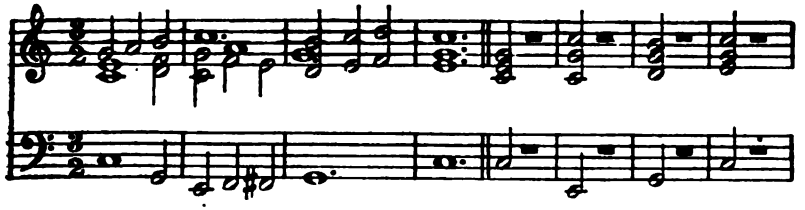
Compound rhythm is that wherein the double and the triple rhythm are contained within the same measure. Thus a passage in $\frac{6}{8}$, $\frac{12}{8}$ or $\frac{6}{4}$ rhythm involves both the double and the triple accent.



If a measure be filled by two equal chords the first will be accented, the second unaccented. By virtue of the accent, the first chord acquires greater importance than the second, and makes a stronger impression upon the mind. This can be illustrated by playing the following series of accented and unaccented chords, and afterward playing only the accented chords, which will be found to convey largely the musical idea of the whole:



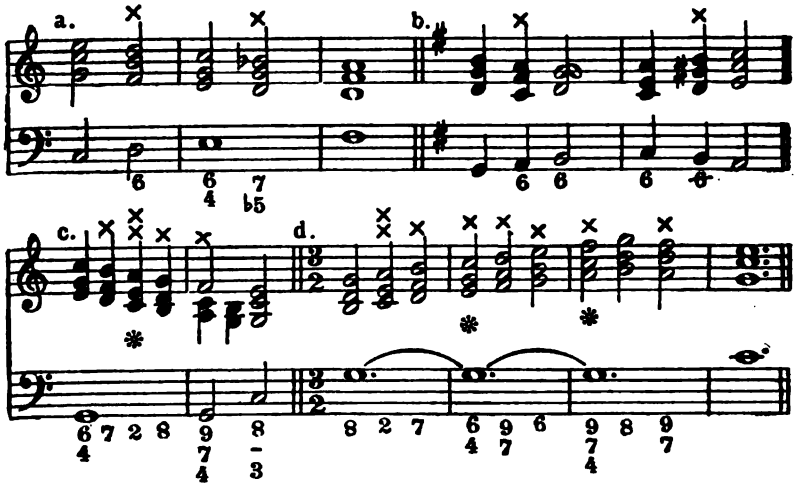
The same thing is true in triple time, though less markedly, since by playing only the accented chords, *two* are omitted for every *one* that is played.



The foregoing examples illustrate the fact that even fundamental harmonies are not equally important. As indicating the relative importance of the accented and the unaccented fundamental chords, the former are called the *primary*, the latter the *secondary* harmonies of the measure.

### Passing Chords.

The term "passing chord" has no precise limits of definition. It is applied in general to all *unaccented* chords in which *some or all* of the voices move by one degree (diatonically) from one accented chord to another.

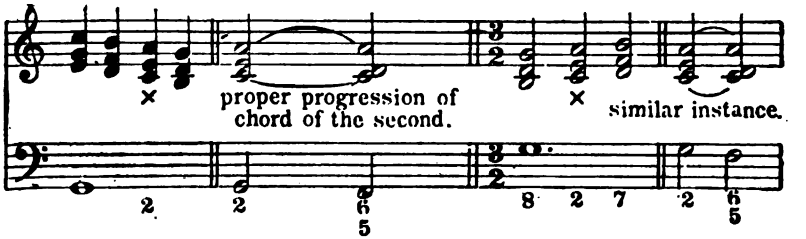



The term would also be applied where, in a series of passing chords, one of the same sort occurs on the *accented* part of the measure; as those marked * in (c) and (d).

### Passing Chords are of Three Distinct Sorts.

1st. *Fundamental harmonies, with a regular progression as such;* illustrated above by all the passing chords in (a) and (b).

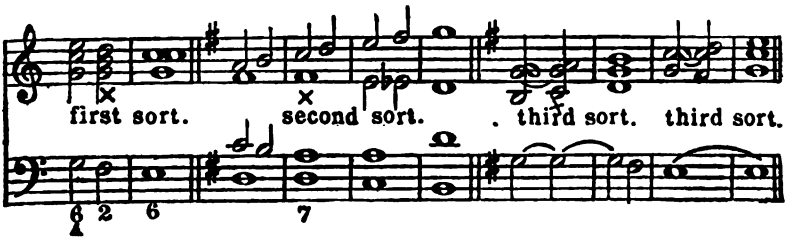
2d. *Those in the form of fundamental harmonies, but without the proper progression as such.* As in the first measure of (c) and (d), with the normal progression as follows:




Such chords, though having the *form* of fundamental harmonies, have not their *force,* but are of the same nature as Auxiliary chords explained below.

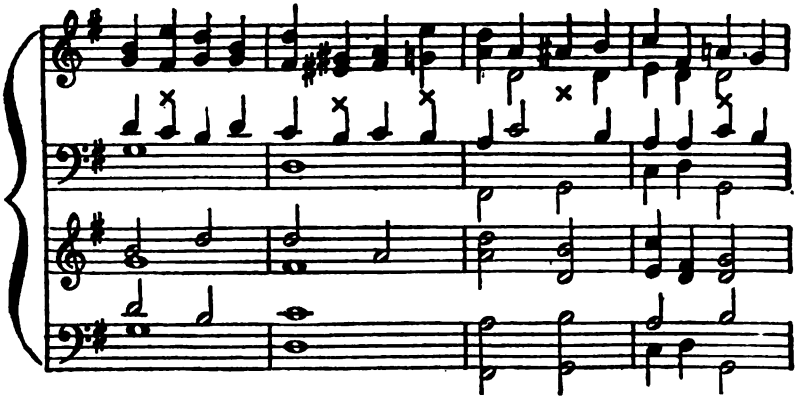
3rd. *Auxiliary chords* This term is applied to all harmonies in which one or more voices contain *unprepared auxiliar tones.* (When the auxiliar tones are *prepared, the chords are called "suspensions."*) When the unprepared auxiliar tones are *also passing tones,* there result *passing chords* of the 3rd sort.

The three sorts of passing chords are illustrated thus:




The above chords of the second and third sort may be analyzed either as *auxiliary passing chords,* or as *fundamental chords with passing tones.*

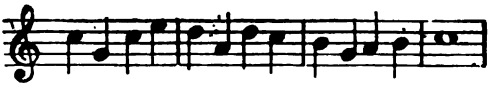
Another sort of auxiliary chord frequently used is that in which the auxiliar tones are not *passing* tones, but are taken *by a skip,* as already explained in the chapter on auxiliar tones; or the two sorts may be combined in the same chord. Let the pupil closely examine the following, and determine the fundamental and auxiliary chords, and the different sort of auxiliar tones.



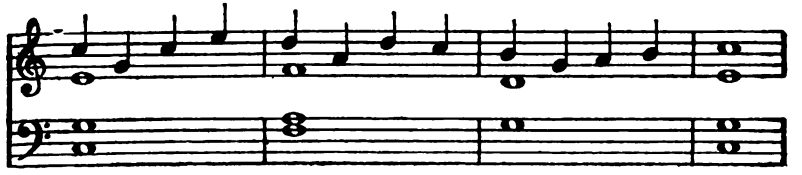
THE HARMONIC SUPPORT OF A MELODY.

In the definitions of the Introduction, the distinction between *melody* and *harmony* was shown. The two are radically different, and can be to a considerable degree separated from each other, *but not entirely.* In a succession of chords there may be nothing apparent that seems worthy the name of melody, yet doubtless there cannot

be even the simplest succession of connected chords in which the experienced ear cannot detect at least a faint quality of melody, either in one part or another. The utter divorcement of melody from harmony seems impossible. But how is it when a melody is performed which is absolutely free from all harmonic accompaniment? Do we then have melody alone, pure and simple? No, for in such case the melody is *the audible edge of an inaudible harmony.* Melody is *linked* into harmony, and, in its performance, drags the harmony more or less distinctly through the mind. When a well known melody whose harmony is familiar is performed, the associated harmony is quite clear in the mind of the hearer. In a melodic passage like the following,

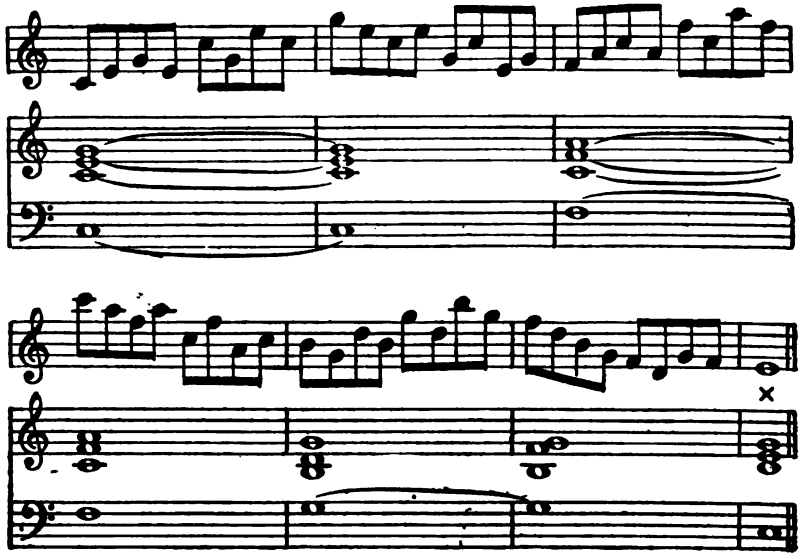


the intelligent musician will find that he is accompanying the melody with a delicate, filmy, harmonic support, like this, for example:



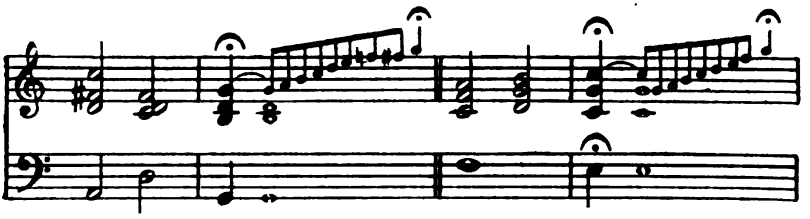
There are four ways of determining such unexpressed attendant harmonies:

1st. *By the tones of the melody itself,* when they are all, or nearly all, elements of the underlying harmony, thus:



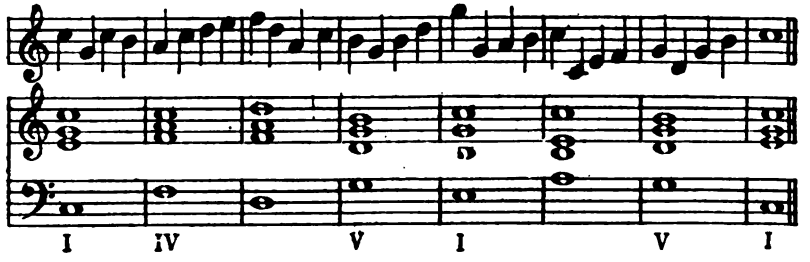
2d. *By the metrical requirements* of a composition when demanding the *cadence-formula* (see Chap. XIX.), as at the end of a composition (as in last measure at x).

3rd. *By the last expressed harmony*, when the tones of the melody are not conspicuously foreign to it, thus:



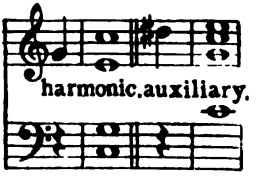
(This shows how the same melodic passage may rest on entirely different harmonies).

4th. *By the laws of natural selection*, according to which the melody will be supported at the most important points by the *primary* chords; elsewhere, by harmonies that are simple and closely connected, thus:



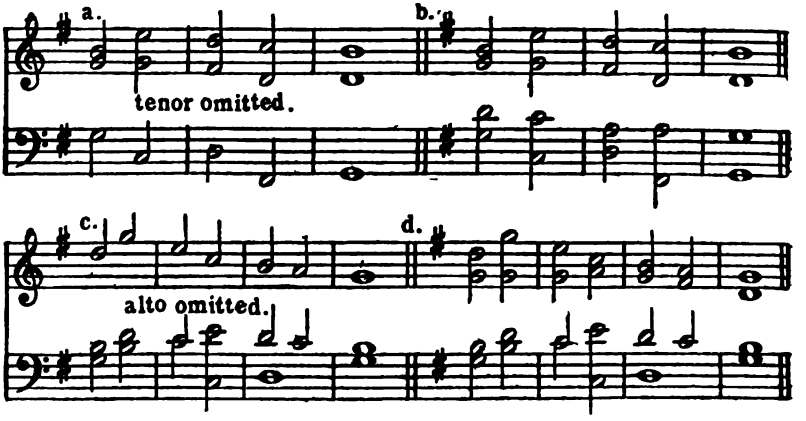

In analysis, the 1st and 3rd methods will cover most of the cases of unharmonized melody. Octave passages are seldom so prolonged as to require more than two or three unexpressed harmonies.

An isolated note is either a harmonic or an auxiliar note, according to circumstances, thus:



### Defective Harmonies.

Not infrequently one or two elements of the chord are unexpressed, as in duet and trio passages, where the circumstances of the case must determine the full harmony.




(The voice omitted in (a) and (c) is supplied in (b) and (d).

The harmonic analysis of duets and trios will show that the omitted parts are expressed in the accompaniment.

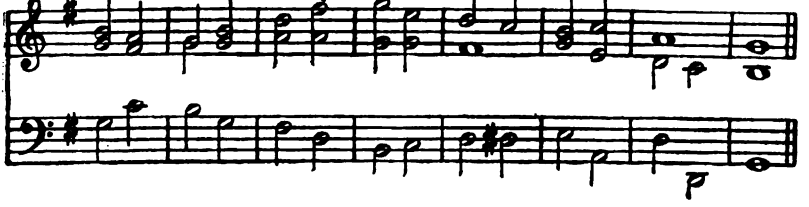
In the first of the following exercises a single voice is omitted, and in the later ones, two voices. They afford opportunity for the exercise of all that has been thus far learned in Harmony, and demand careful study. Let them first be filled out so that the harmonies shall be the "fundamental chords", and afterward let the added parts and also the original parts be moderately embellished with suspensions, passing tones, etc. Each exercise will admit of more or less variety in fundamental harmonies and embellishment, and the pupil is advised to write each one in as many different ways as possible, using "open" and "close" position in each exercise, and alternating as the case requires.

### Exercises in Defective Harmonies.

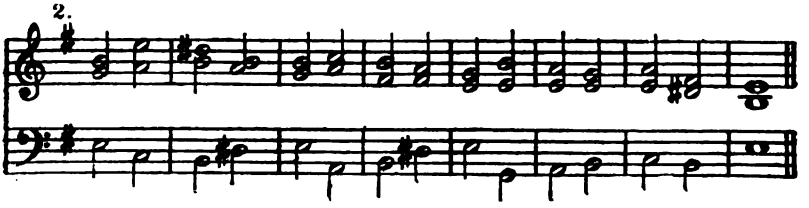
If the following exercises prove too difficult for the pupil, let them be reserved for the "review" (see page 251).

After completing the harmony in each exercise, let the chords be analyzed

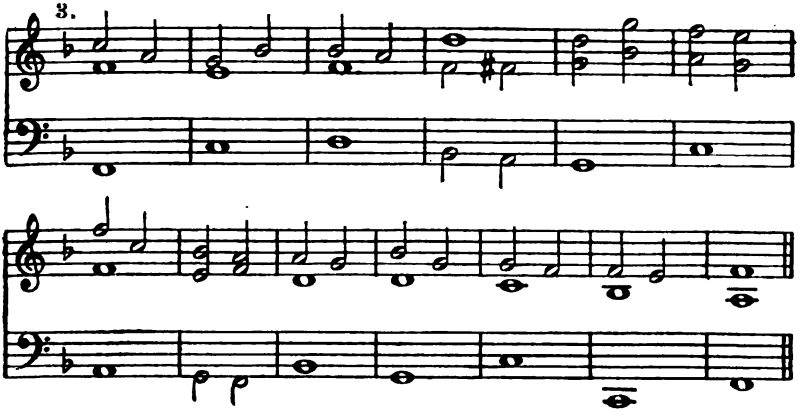
1. supply tenor in 1-3.



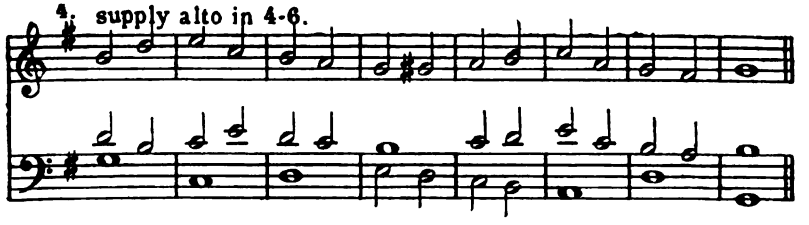
2.



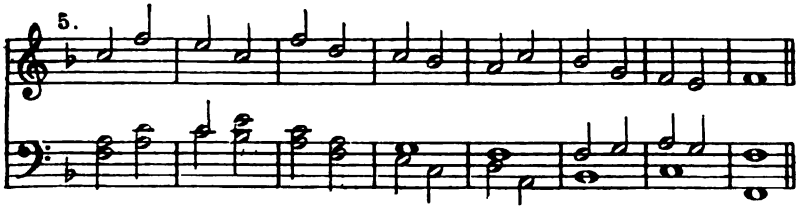
3.



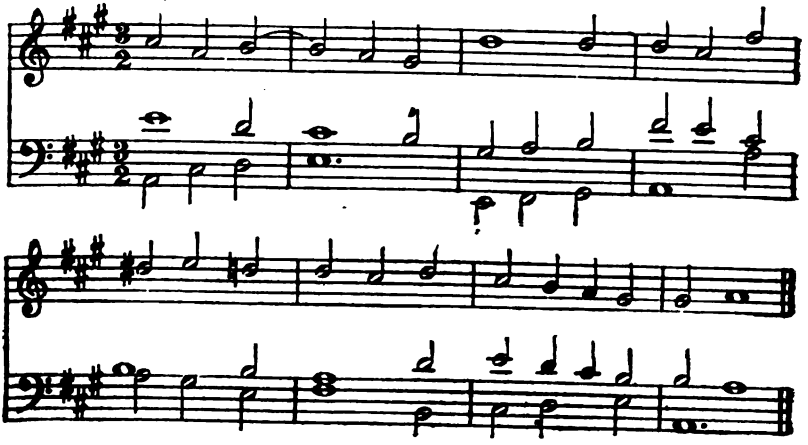
4. supply alto in 4-6.



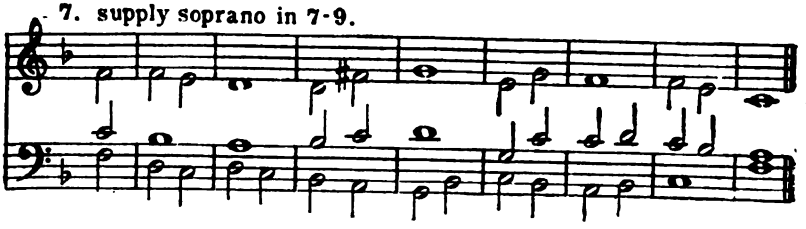
5.



6.



7. supply soprano in 7-9.



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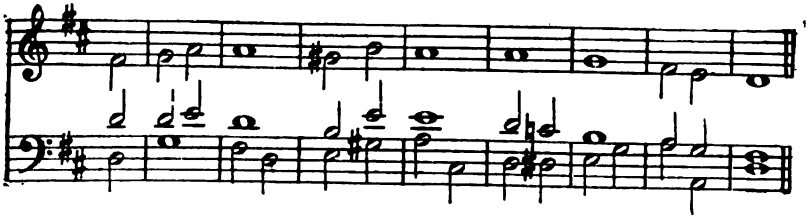
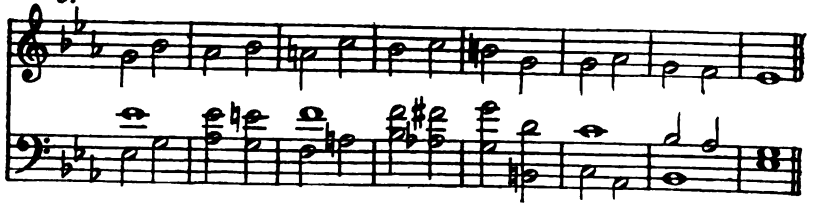
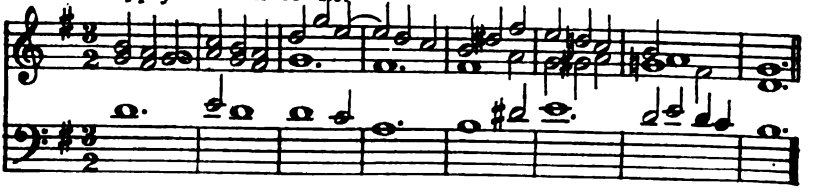
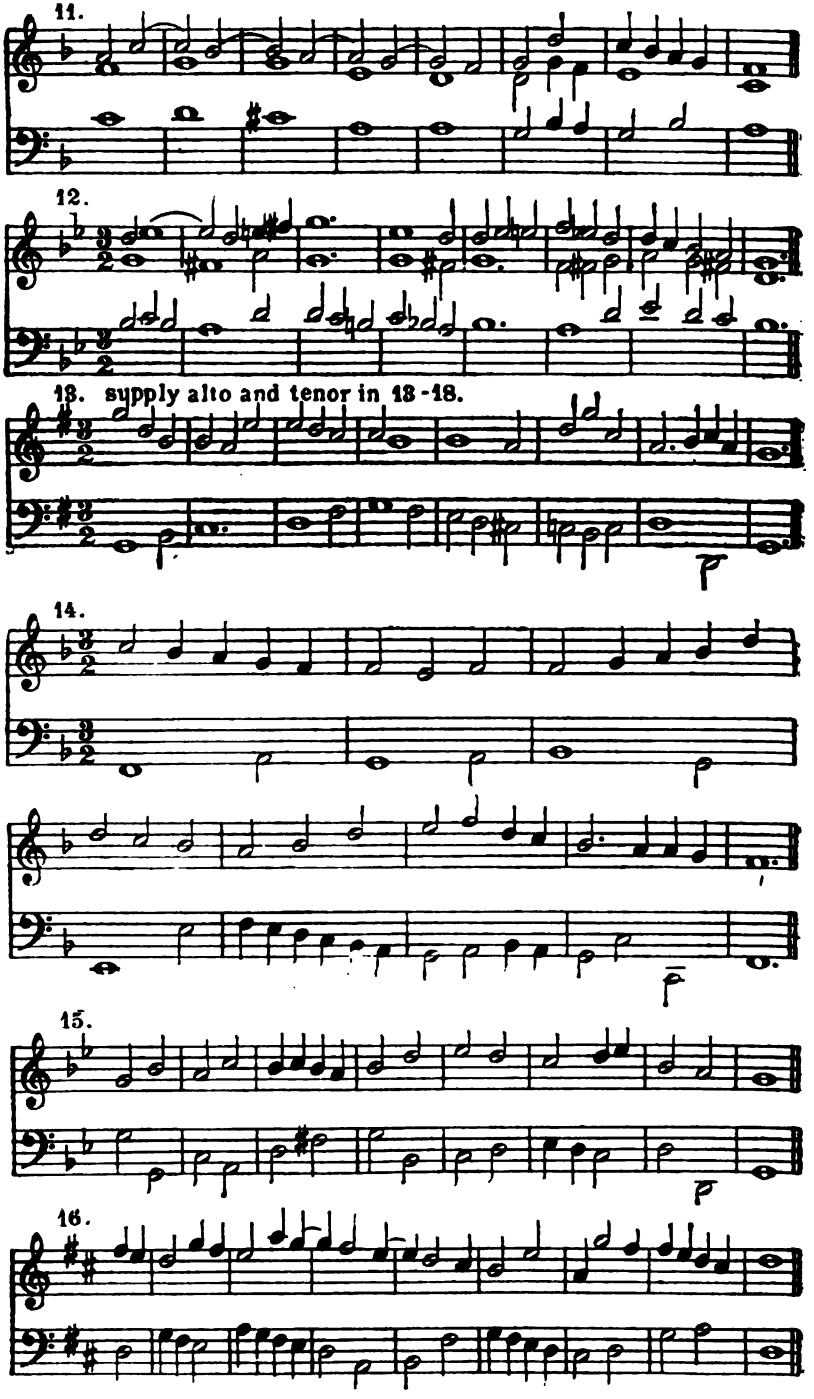


9.

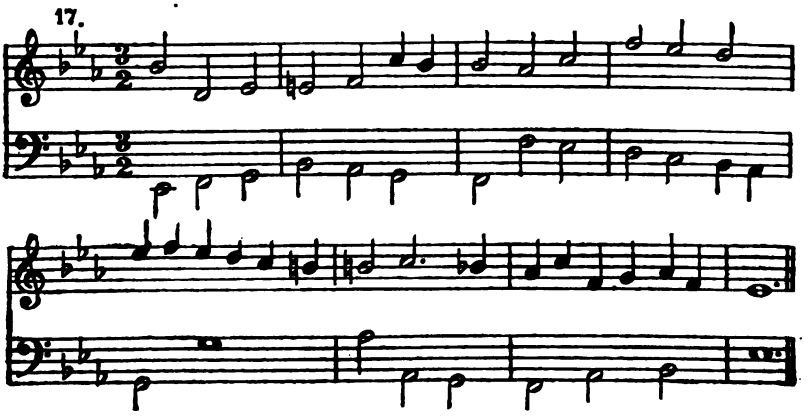


10. supply bass in 10-12.

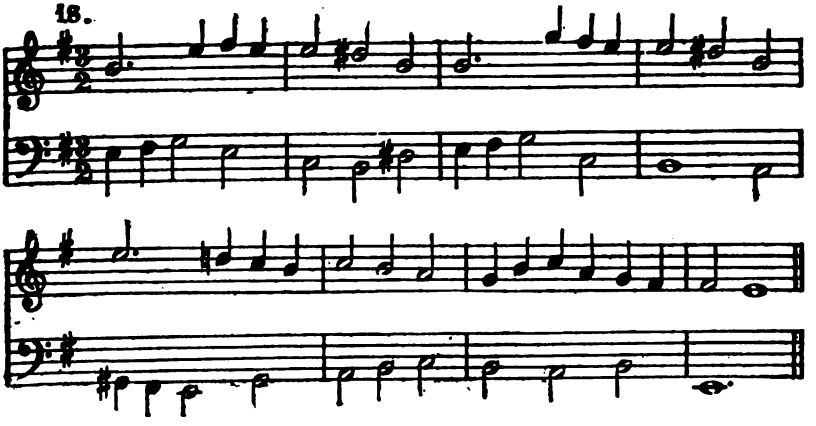



11.
12.
13. supply alto and tenor in 13-18.
14.
15.
16.

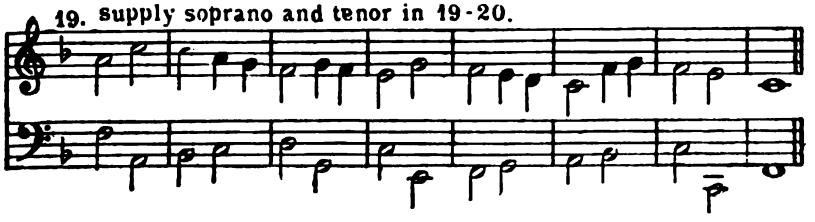
17.



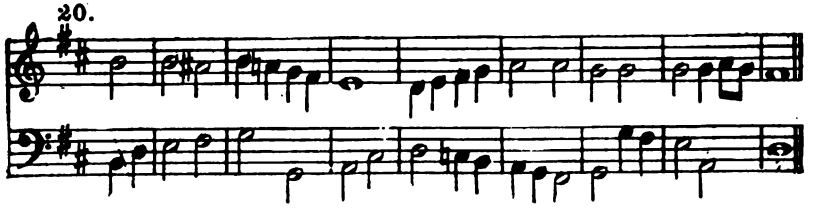
18.

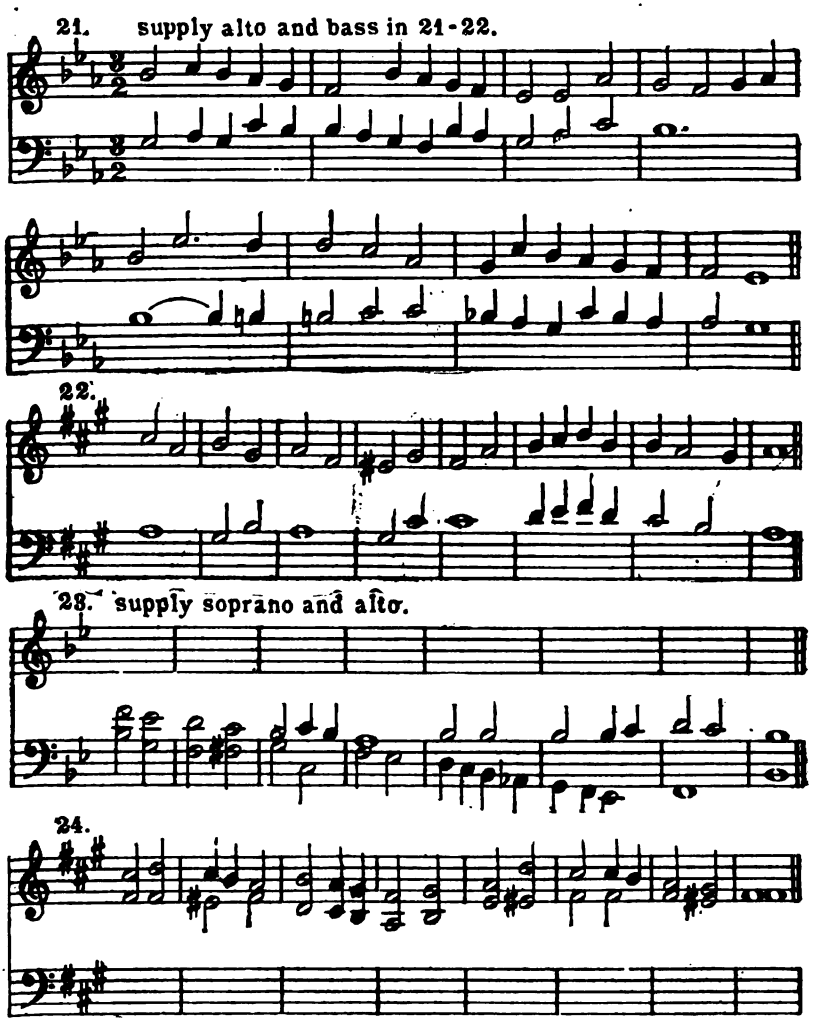


19. supply soprano and tenor in 19-20.



20.



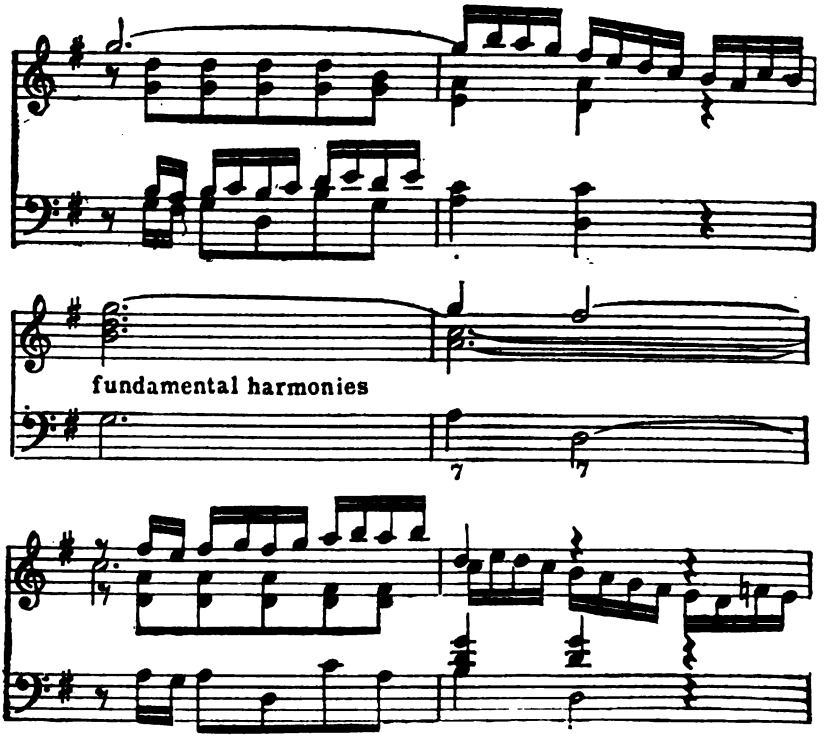


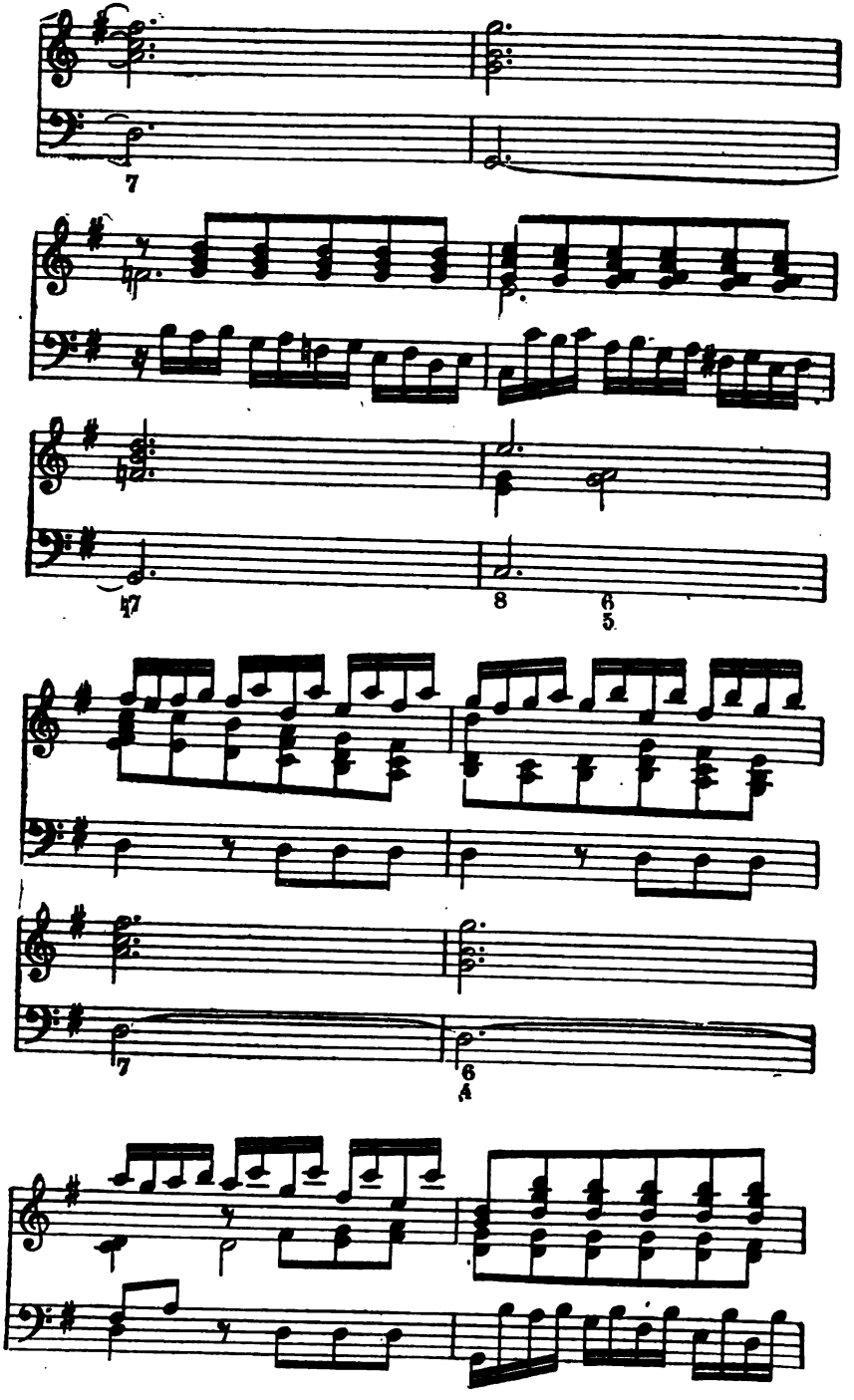

SLOW PROGRESSION OF FUNDAMENTAL CHORDS.

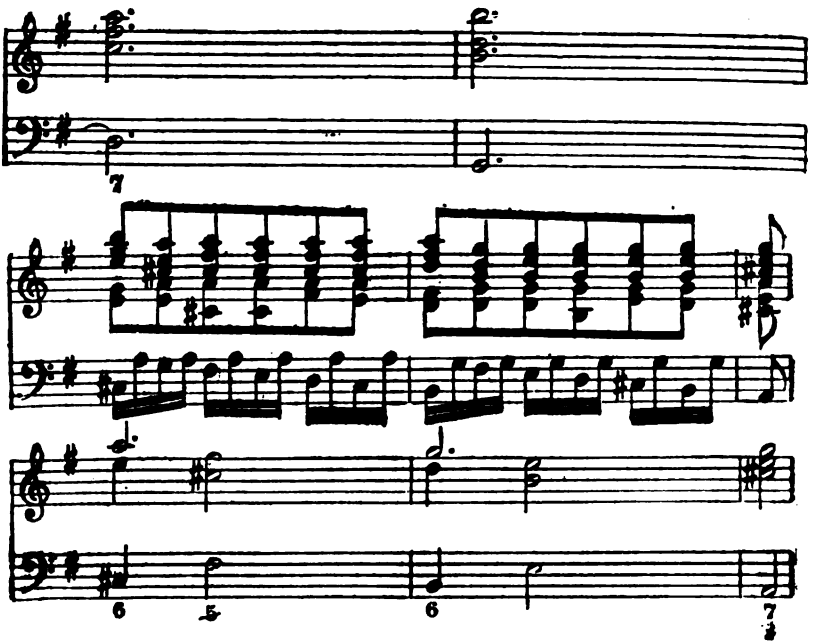
There are limits in the rapidity with which fundamental chords can follow each other, with ease and satisfaction to the mind. While these limits are not mathematically precise, there is a wonderful concurrence of opinion which forbids that the elementary chords should follow each other, on the one hand, too slowly, or on the other hand, too rapidly. In the former case the fundamental movement is too monotonous; in the latter case the mind is required to exert itself unduly to grasp the movement. The normal tempo of the elementary chords is one of the requisite qualities of a successful performance.

*Ease of comprehension of a musical production depends upon the moderate movement of its fundamental harmonies, and their natural connection.* These conditions being complied with, it matters little how rapidly the individual tones and chords succeed each other. Multiplication of "harmonic tones" or the reiteration of the self-same harmony creates no new harmonic effort for the mind, and auxiliar tones and chords, in proper subordination to the fundamental chords, do not obscure the transparency of the harmonic frame-work. As regards the multiplication of "harmonic tones," no better illustration of this truth can be given than one that has already been cited, viz., the opening measures of the last movement of Beethoven's "Moonlight Sonata" See page 187).

Fine illustrations of a clear and simple harmonic basis, yet exhibiting great elaborateness by means of harmonic and auxiliary tones, is found in J. S. Bach's organ preludes. The use of harmonic and auxiliar tones *in the bass,* as is so characteristic in Bach, gives an appearance of far greater harmonic complexity than really exists. Compare the following, from one of the above named compositions, with the subjoined "harmonic basis".




7
♭7
8
6
5
7
6
4



No better discipline can be found in the analysis of harmonic structure, than writing out, in the manner of the above, of the fundamental harmonies of Bach's Preludes, in which the *fundamental* and the *ornamental* are so wonderfully blended. Such an exercise as this is unsurpassed in developing one's powers of legitimate elaboration of the simple chords. The limits of this work forbid further illustration of this sort of exercise, or quotation of passages to be analyzed. The pupil needs to have *entire* compositions under his hand, and while Bach's Preludes (for piano or for organ) are pre-eminently recommended, the works of any of the classic composers can also be studied to great advantage. The contents of the following chapter upon the "organ-point" must be understood, for the elucidation of many passages.

Such analysis as the foregoing reveals the fact that *fundamental harmonies* generally move no faster, often not as fast, in "Allegro" as in "Adagio" tempo. The rapidity is gained, not by hurrying the fundamental chords, but by means of the numerous harmonic and auxiliar tones. Indeed, there is often a still slower movement of the foundation chords, as an offset to the brilliancy of ornamentation.

### Summary.

**Rhythm**:—The "measure":— Meaning of "whole note":—Two generic sorts of rhythm:— Define each:— Varieties of double rhythm:

—Varieties of triple rhythm:—Compound rhythm:—Passing chords:—Three distinct sorts of passing chords:— Harmonic support of a melody:— Four ways of determining unexpressed attendant harmony:—Slow progression of fundamental chords.

## CHAPTER XVII.

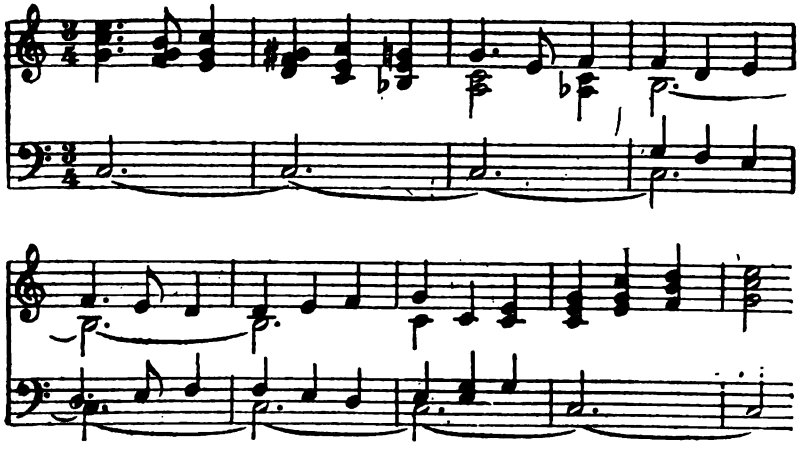
### THE ORGAN-POINT.

The "Organ-point" or "Pedal-note" presents the widest divergence from the simple progression of fundamental chords, and its discussion has therefore been postponed to the last chapter of harmonic construction. But this divergence does not bring it out of the realm of *law* into the region of *license*.

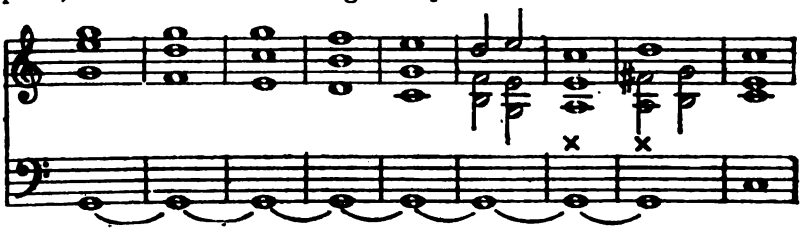
***All tones heard simultaneously must stand in some consistent relationship to the fundamental harmony, but not necessarily in any relationship to each other.***

The "Organ-point" is an instance of a more protracted use of auxiliary chords upon a stationary bass. The word "point," in this connection, is the original term for "note," and it is called "organ-point" because the organ is the most serviceable instrument for continuing a tone indefinitely without reiteration. It is also called "pedal-note" because usually produced by one of the organ-pedals, while the remaining harmony is furnished either from the organ key-board, or by other instruments or voices.

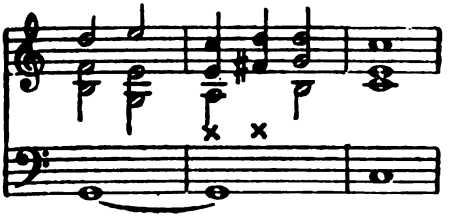
While by the continuous flow of harmonies upon a stationary bass somewhat new and striking effects can be produced, an analysis of the case reveals no method of procedure that is not deducible from the previous requirements of chord-connection. The following is an illustration of the use of the organ-point.



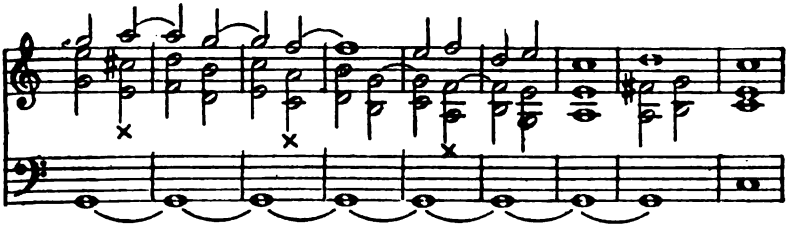
In order thoroughly to understand the development of an organ-point, let us take the following example of *basal harmonies*:



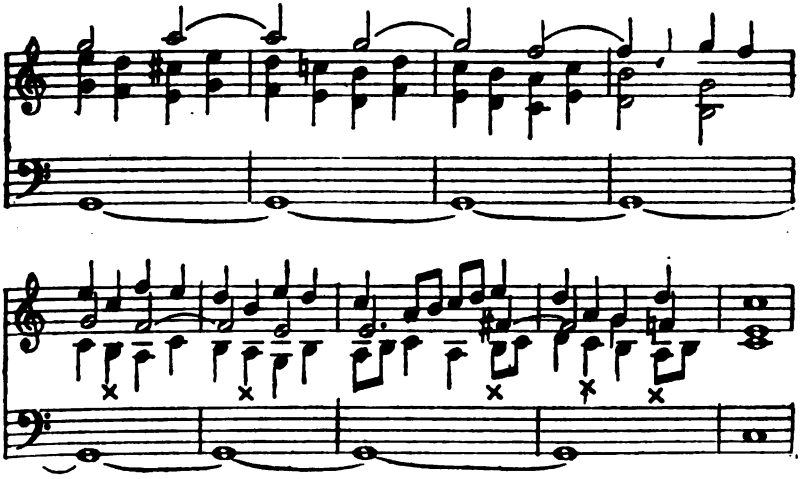
The above are all *fundamental harmonies*, except the two chords marked x, which are auxiliary. If the harmonies at this point had been abbreviated thus,



the auxiliary chords would have been in their normal subordinate relation to the fundamental chords, and the A in tenor and F# in alto would appear plainly as *passing tones*, and D in soprano would be an *anticipation*. Compare the original and the abbreviation carefully, and the essential likeness at once appears. In the original the auxiliary effects are, so to speak, *magnified* by longer duration. *This magnifying of auxiliary chords is legitimate as a counterpoise to the prolonged assertion of the fundamental G-chord which is maintained by the continuance of the pedal-note through eight measures*, so that *in the aggregate* the fundamental and auxiliary chords still maintain their normal relation. In other words, the gravitation of the harmonies, through all the organ-point, is to the G-chord, which justifies what would otherwise be a disproportion of auxiliary effects. In the same way other parts of the organ-point may be embellished with auxiliary chords such as, in other circumstances, would be out of proportion, as in the following:

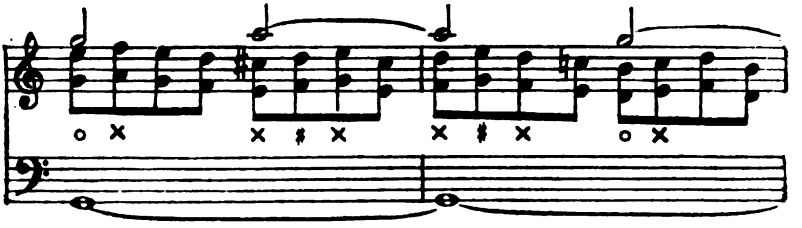


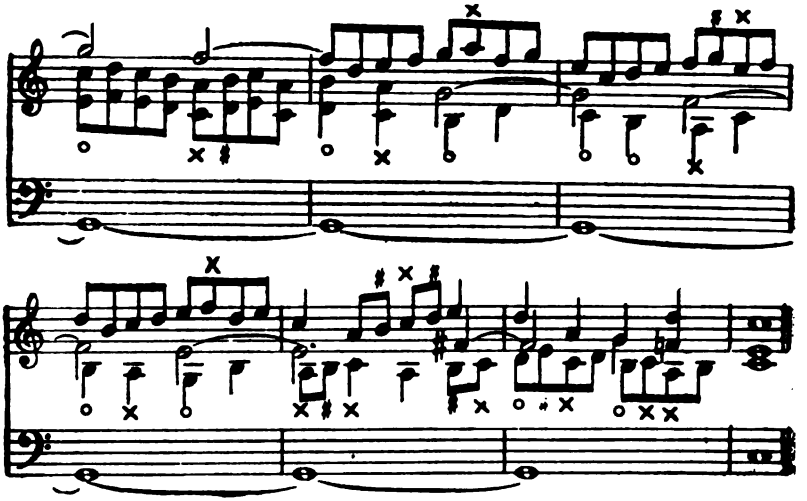
Ordinarily the chords marked x would be expressed in quarter or eighth notes; but whoever feels the *magnifying* of the entire effect, and hears the G-chord, sounding through it all, will consent to the prolongation of the auxiliary chord. The above harmony can be maintained, and yet made less angular by the use of passing and harmonic tones, thus:



It is well understood that auxiliary chords are *tributary* or *gravitating* to fundamental chords, as seen in the foregoing illustration in half notes. But in the last illustration (in quarter notes) we find chords (marked x) which gravitate to the auxiliary; these are really sub-auxiliary, and this is precisely what we should expect; for when auxiliary chords are advanced to the duration of fundamental chords, there would naturally spring up a class of chords that would occupy a correspondingly subordinate position. We shall sometimes find such sub-auxiliary chords in a passage that would not be called an organ-point, but all such cases will have more or less of the *quality* of the "organ-point."

The above can be still further elaborated, which will increase the auxiliar and sub-auxiliar effects:





The above is partially analyzed, as follows:

o means fundamental chord

x means auxiliar chord,

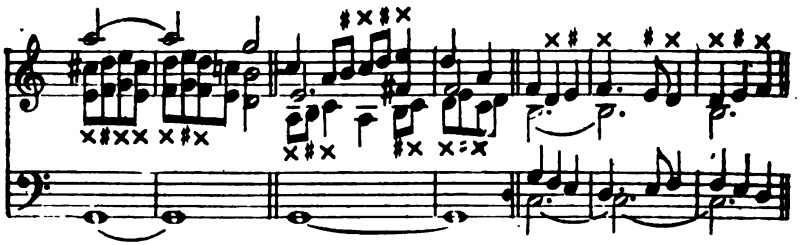
# means sub-auxiliar chord.

The pupil should study the above sufficiently to recognize the *drift* of sub-auxiliar chords to auxiliar chords, and of auxiliar to fundamental chords.

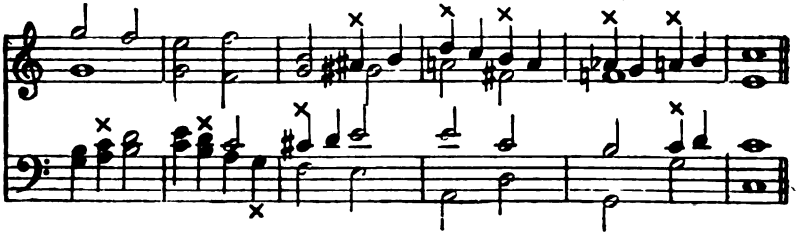
This relation of the different sorts of chords, and the *immediate and ultimate gravitaion of all harmonies*, can be exhibited in a tabular view, as follows:

GRAVITATION

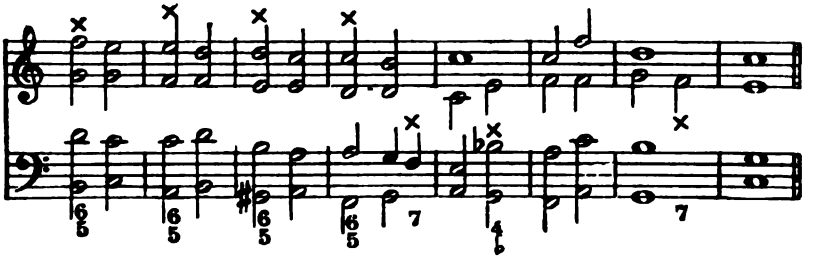
of sub-auxiliary to auxiliary chords.



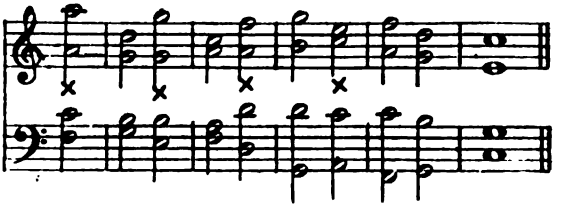
of auxiliary to fundamental (seventh and common) chords.



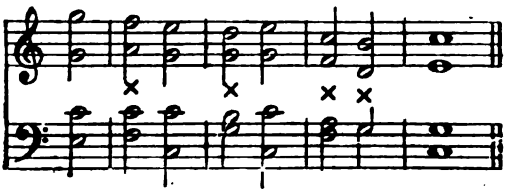
of seventh and common chords to common chords.



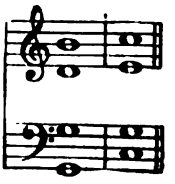
of common chords (primary and secondary) to primary chords.



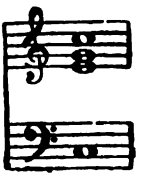
of primary chords to tonic and dominant chords.



of dominant chord to tonic chord.



The Tonic Chord

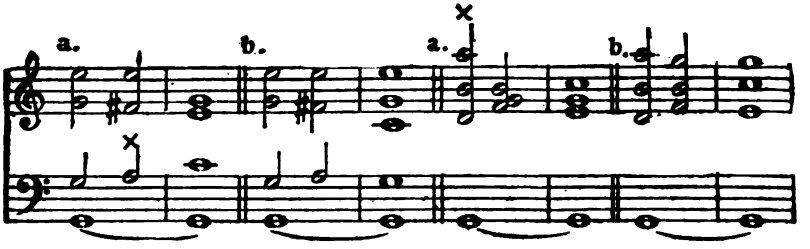


THE ULTIMATE OF ALL HARMONIES.

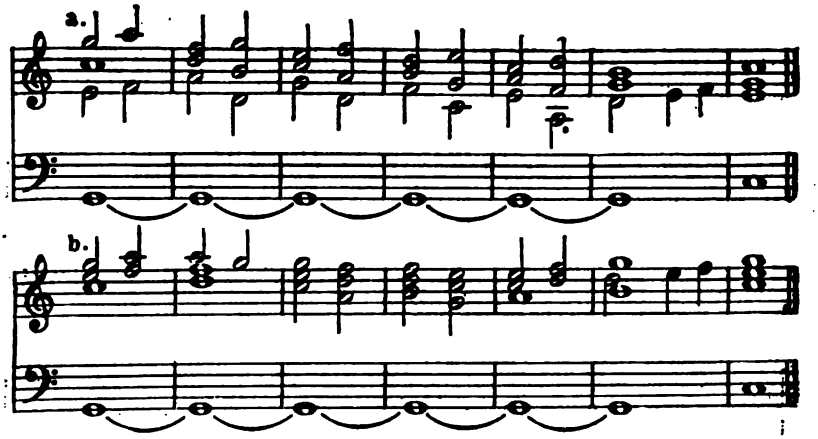
The foregoing table illustrates a very important truth in Harmony, but it must not be misinterpreted. It does not mean that a chord of any sort is immediately followed by a chord of the next higher grade. The various grades are intermingled in countless variety; but the invariable *drift* or *tendency* is always from the less important to the more important—from auxiliary to fundamental —from seventh to common—from secondary to primary—and among the primary, the Dominant and Tonic are clearly discernible as the grand foci around which the multitude of harmonies revolve, like "double stars" the centre of a starry system, yet one of them discoverable at last as attendant upon the other—the Dominant upon the Tonic—and this last the controlling, attracting centre of all!

The above "table of gravitation" shows at once which tones are best adapted for prolonged use as "organ-points"; that is, those tones whose chords exert the most attractive influence through the web of harmonies, and at last assert themselves, as it were, in the form of a victorious "resolving chord" after the suspense of tangled harmonies—the Dominant and Tonic.

An apparently unauthorized freedom in the movement of voices, such as is illustrated in each of the following examples marked (a), is amply explained when we notice, in the effect of such passages, that the chord is really regarded in its *entirety*, as a *compound unit*, the progression of the *individual* voices being left out of sight, and the ear finding in the following chord the harmony *as a whole*, which might properly follow the discord. In such cases the discordant voice will often fail to give its resolution, but that resolution will appear in some other voice, perhaps an octave or two removed. That is to say, *the chord as a whole is resolved*. In the following examples, compare (a) with (b), and the essential likeness of the resolution appears. The difference is, that the three upper voices are in a *different position*, but the resolving chord is identical.

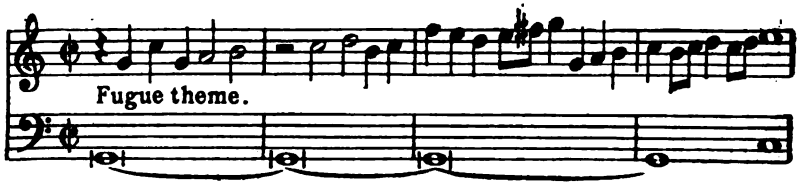


This view of the case explains many progressions, especially in instrumental music, that appear quite lawless. Thus in the following, at (a) the voices *individually* seem to move quite independently of the bass, but the actual chord-progression, as a compound unit, is the same as at (b).

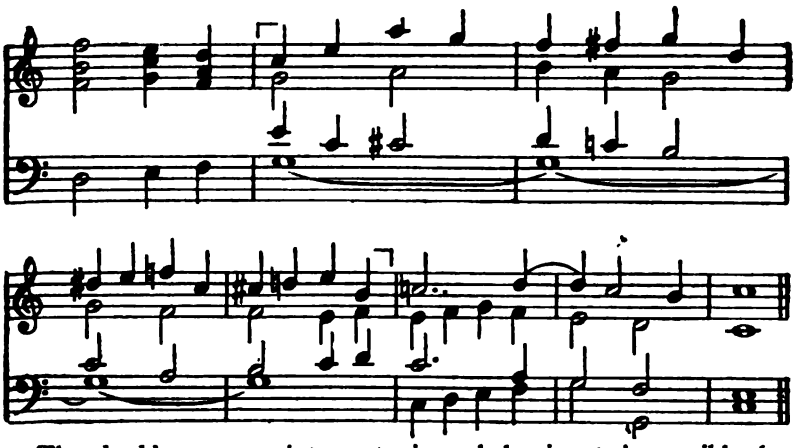



As it is natural to expect the resolution in the voice that gives the discordance, the mental effort in finding the resolution in the other manner, as at (a), is too great to admit of frequent occurrence. Yet, when the mind has been aroused to a special tension, it can grasp the significance of a progression that would ordinarily be too abstruse.

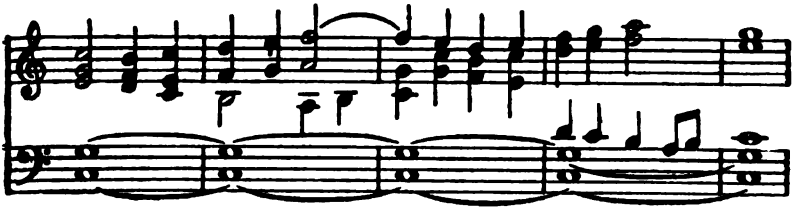
The organ-point is most successfully prolonged either by the use of a sequence in the upper voices, or where it underlies a melodic passage, already become familiar (as a fugue theme), thus:




The entrance, and usually the close, of the organ-point, takes place at a point of accent, and the first and the last chord must be one to which the bass tone belongs, thus:



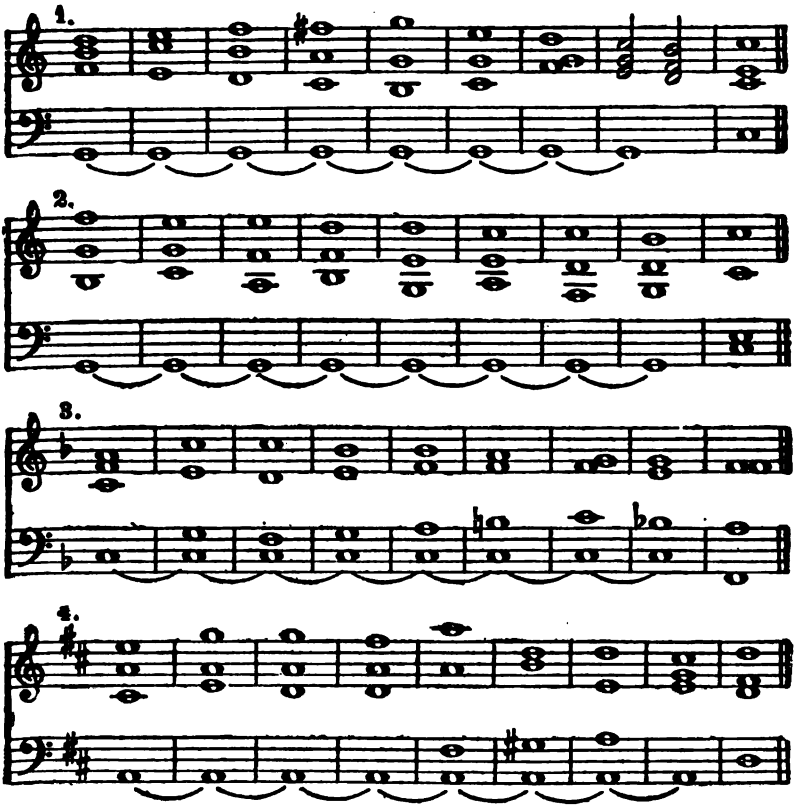
The *double* organ-point, on tonic and dominant, is possible, but rarely used, owing to the occurrence of so many chords discordant with either the one or the other.



The dominant is far more frequently used as an organ-point, as the dominant chord is favorable to the continuance of the composition, after the close of the organ-point; whereas the tonic naturally leads no further, and is best used as organ-point at the conclusion of a piece.

The sustained tone, instead of being in the bass, can be in the highest, or in one of the middle voices, but the other voices must be more constantly concordant, as discordance in such case is more conspicuous. As classical examples of such sustained tones may be cited the "Gloria" of Cherubim's Mass in C-major, where A♭ is held by the violins, while the chorus and other instruments carry out their several melodic and harmonic progressions; also the D of the violins in the introduction to Mendelssohn's Overture, "Quiet Sea and Prosperous Journey," and finally, the sustained A, now in the bass, and now in the upper and middle voices, in the Trio of the Scherzo of Beethoven's Symphony in A-major. In all these cases there are but few chords of which the sustained tone is not an element.

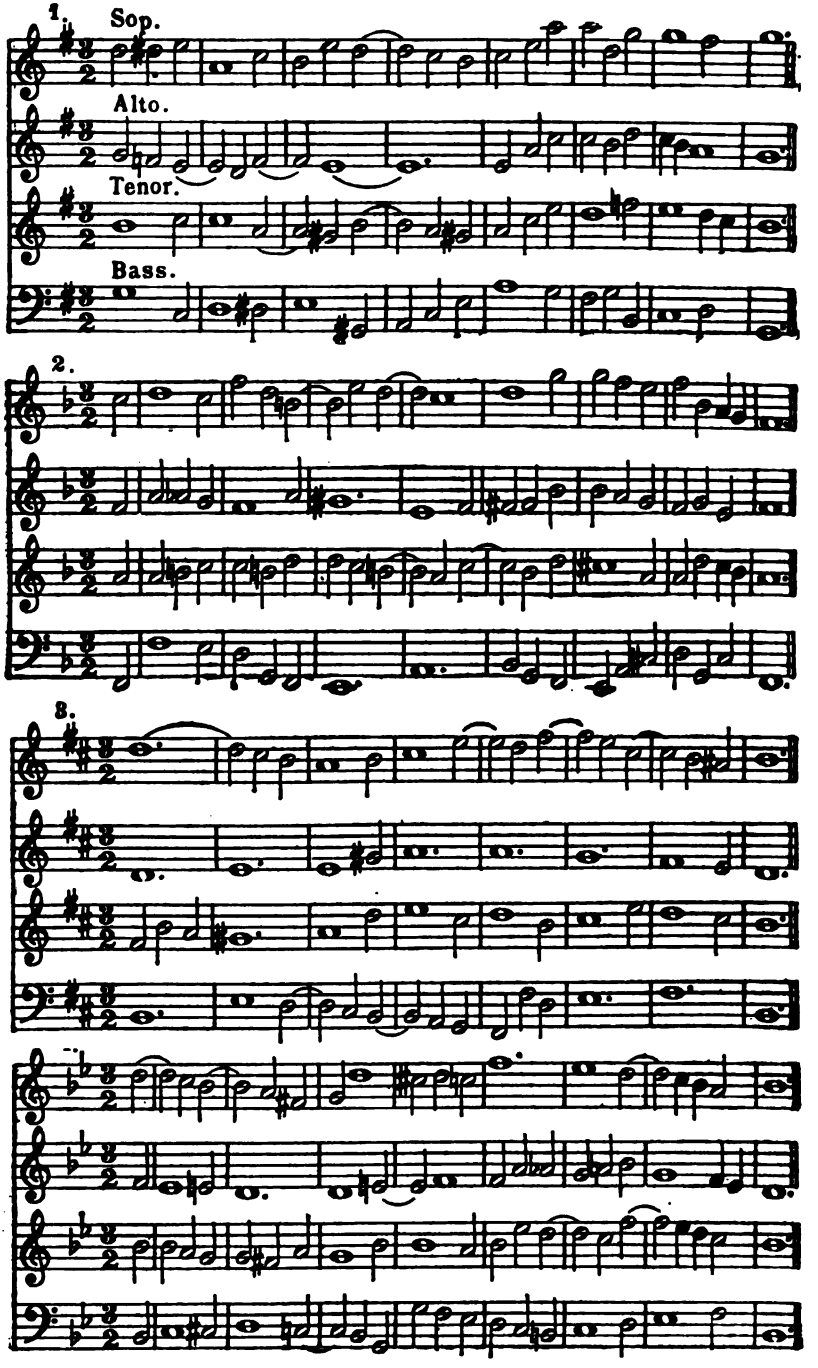
To give practical study in organ-point let the pupil elaborate the several upper voices of the following exercises:

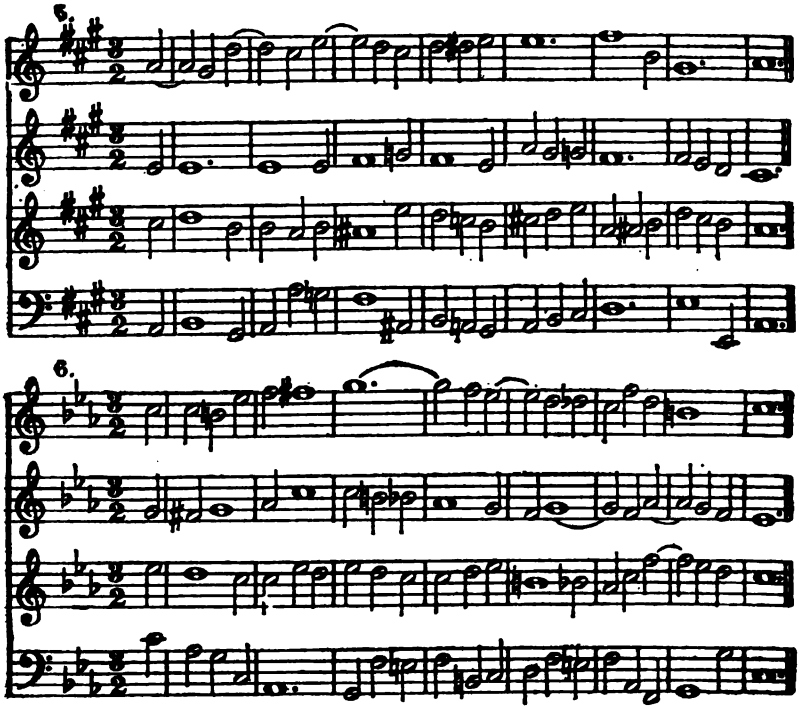



SUMMARY.

Meaning of the term "organ-point", or "pedal-note":—Normal relation of fundamental and auxiliary chords in organ-point:—Why auxiliary chords can be "magnified" in organ-point:—Auxiliary chords "tributary" or "gravitating" to fundamental chords:—Sub-auxiliary chords, and why permissible in organ-point:—The "gravitation" or "drift" of the several sorts of chords:—Tones best adapted for organ-point:—The ultimate gravitating point of all chords:—Apparently lawless progression of individual voices explained by resolution of chord *as a whole*:—Entrance and close of organ-point:—First and last chord of organ-point:—Double organ-point:—Why dominant is more often used than tonic, as organ-point:—A sustained tone in any other voice than the bass.

*Figure the basses of the following exercises.*





## CHAPTER XVIII.

### MODULATION.

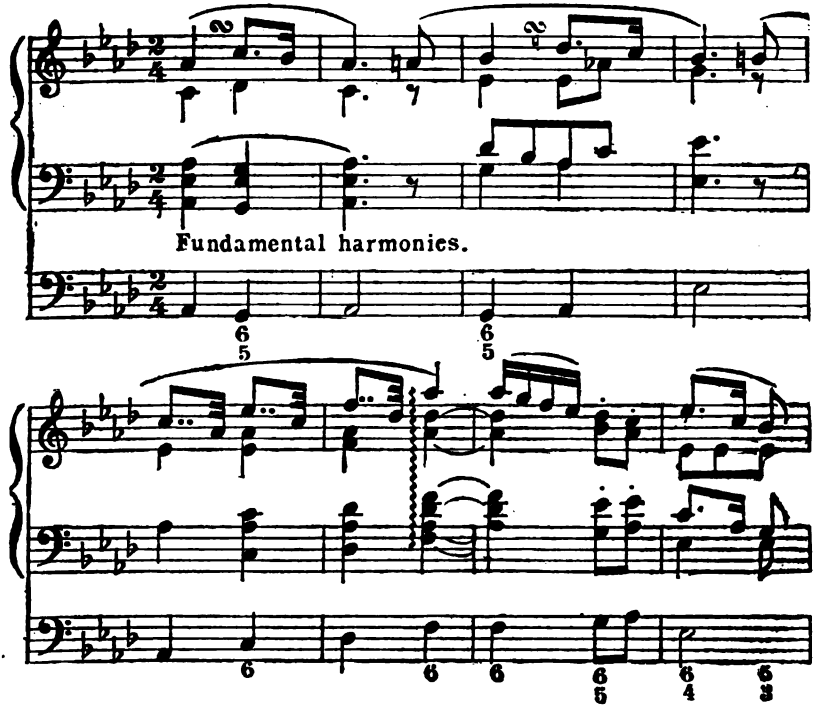
The intelligibility of a musical composition requires that *the scale be evident* in which it is composed. A scale is adopted by the listener, (unconsciously indeed) at the beginning of the piece, and the harmonies must so proceed that the same scale is clearly maintained, or that the mind, without too much effort and suspense, shall be able to assign the harmonies to a new scale. The possibility of maintaining the old, or of adopting a new scale, lies *in the pre-eminent significance and importance of certain harmonies of the scale.*

By previous examination of the several tones of the scale it has been seen that they are not a mere series of tones, distinguishable from each other only in pitch. but that they have inherent individualities in their own quality or coloring, and are linked together by evident tendencies of motion, which give to the entire scale the character of an organism. The two chief tones of the scale were seen to be the Tonic and the Dominant, which may be called the focal points of the scale. This *quality* of Tonic and Dominant is absolutely independent of pitch, and is reflected from *any* tones that occupy these respective positions in a diatonic scale—reflected from them, when held in a certain light, precisely as a particular color gleams

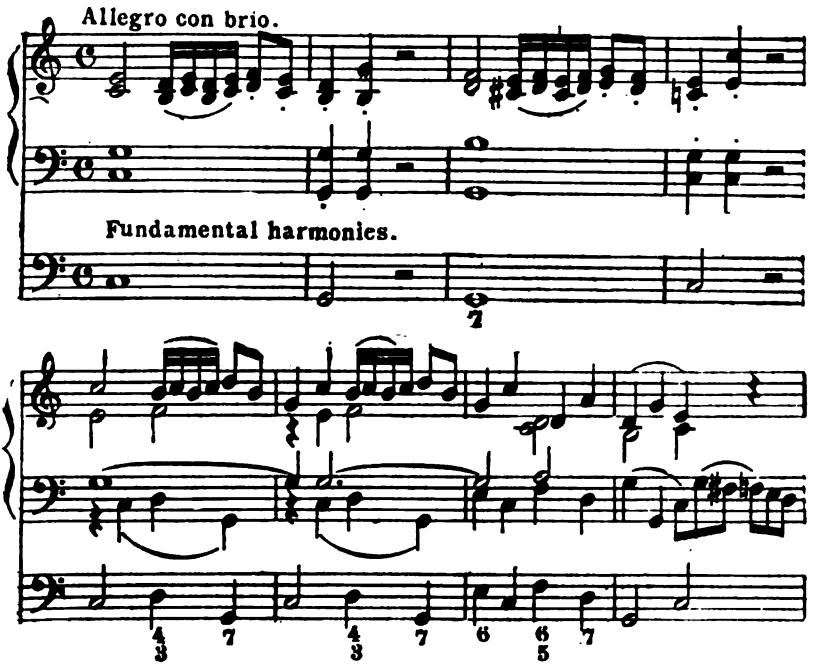
from a diamond when turned to the proper angle. Thus the one tone G

has the quality of the Dominant in the key of C, the quality of the Tonic in the key of G, and the quality of the "leading tone" (the seventh) in the key of A♭. And similarly *every* tone may thus be made to reflect the quality of *every degree in the scale.*

What is true of Tonic and Dominant, as regards their importance, is equally true of the common chords founded upon them. They are the predominant harmonies of the scale, occupying the significant points in the series of harmonies, and toward them the other harmonies gravitate. This is simply a statement of facts in the case, capable of verification by the analysis of all well composed music. The pre-eminence of the tonic and dominant harmonies is also plainly evident by their greater frequency than that of any other chords in the scale. To become convinced of this double pre-eminence, of position and of frequency, let the pupil analyze the first part of different compositions, say fifteen or twenty measures, or as far as the original scale of the composition is plainly maintained. To illustrate the method of analysis we will use the first eight measures of the Adagio of Beethoven's piano Sonata, Op. 10, No. 1.



also the first eight measures of his Sonata, Op. 2, No. 3.




This exercise of analysis should be practised in the case of similar passages, which the teacher can select.

The most important positions for chords to occupy are the opening and closing of the entire composition, and of its sections and periods, also the accented parts of the measures.

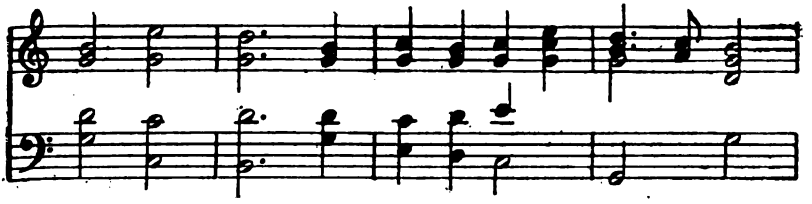
The dominant chord follows long after the tonic chord in importance; and the subdominant chord is much less important than the dominant. While these three, collectively, have a pre-eminence over all the other chords of the scale, which warrants the common classification into Primary and Secondary, it will be found that the maintenance of the existing scale is effected almost entirely by the pre-eminence of the tonic and dominant, and chiefly by that of the tonic.

So long as this pre-eminence is maintained the mind retains the original scale, and when the normal relation of principal and subordinate chords is altered, the mind, sometimes at once, oftener gradually, renounces the old scale and adopts a new one. This substitution of a new scale is called *Modulation*. The assertion of the scale ordinarily occurs in the very first chord, and the scale being adopted, no change occurs until it is felt that the tonic chord of that scale is not receiving its due emphasis, and the mind casts about to

determine in what scale the normal relations of the chords will be restored.

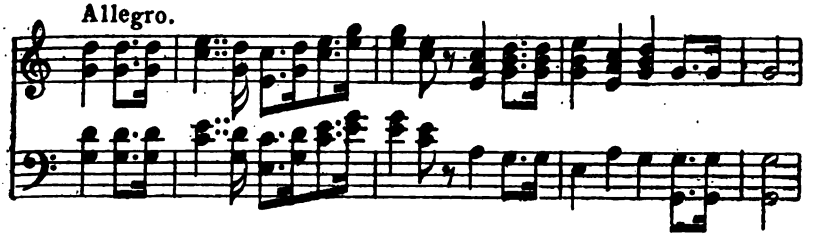
It should be remarked at this point that the only possible method of explaining Modulation is to make it evident to the student what his own mental processes are in this proceeding. Modulation is a spontaneous act of the mind in each individual listener. He cannot be compelled by another, he cannot even compel himself at any given point, to modulate. It must be a spontaneous operation induced by his musical sense of the harmonies in their relations to each other. And any one fully understands modulation just as soon as he clearly sees how his own mind acts in the process. For this reason it is imperative that every statement here made should be fully verified by the student, by examining himself to find whether he actually does what is here asserted.

The following passage would be judged *by the eye* alone to be in the key of C, as there is no signature;



but judged by the *ear, which knows no signature,* the first chord suggests the G-scale, and the whole passage lies consistently in that scale, because of the prevalence of the primary chords of the scale, and especially because of the emphasis and frequency of the G-chord. And yet every chord of it belongs equally to the C-scale.

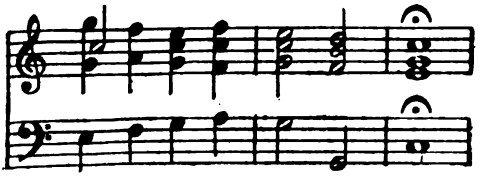
If a piece opens as follows:



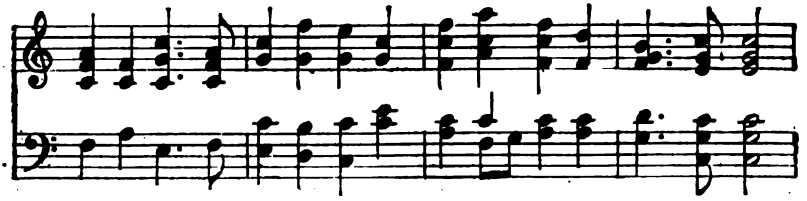

the first scale suggested is the G-Scale, but if played *allegro,* this first thought is dissipated by the emphasis that falls upon the C-chord in the second and third measures, which would be an unusual chord to emphasize as the subdominant of G. Yet in this example every chord belongs equally to the G-scale. The foregoing shows that any

passage of music is in reality in that scale in which the ear interprets it to be, independent of any and all signatures.

Suppose a principal section of a composition in the key of C ends with a complete cadence thus,

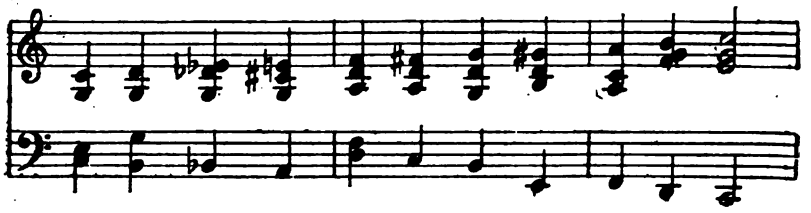


thereupon follows



The musical nonsense of beginning a new division of the piece with a chord so subordinate as that of the subdominant, induces the mind instantly to adopt the new scale of F, and to read the passage in that scale, although it contains not a single chord foreign to the old C-scale. F now takes the coloring of the tonic, and C that of the dominant.

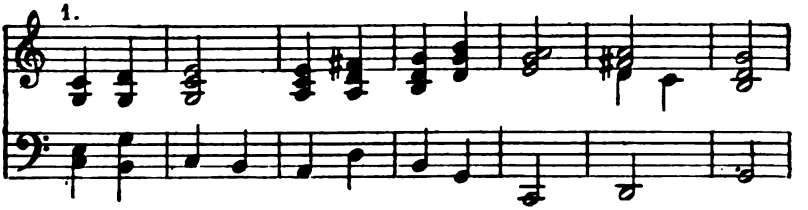
Thus far we have said nothing of accidentals as a means of modulation, for we have used none. The common fallacy of supposing that modulation *hinges* upon the use of tones foreign to the scale is sufficiently exposed in the foregoing. The absence of accidentals cannot prevent a modulation, nor their presence cause one. Modulation can be effected instantly and easily without them, and on the other hand they can be introduced numerously without our feeling any inclination to change the scale, thus:



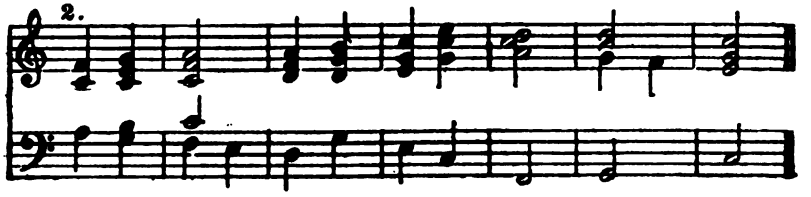
This is not saying that accidentals are not frequently of very great assistance in effecting a modulation, nor that the chords in the above example that contain them do not offer especially favorable points at which the mind *could* be diverged into a new scale. But

they are futile *in themselves* to accomplish the work. The musical sense must first require a new key note for the re-establishment of the normal relations of principal and subordinate tones and chords, before a modulation can take place.

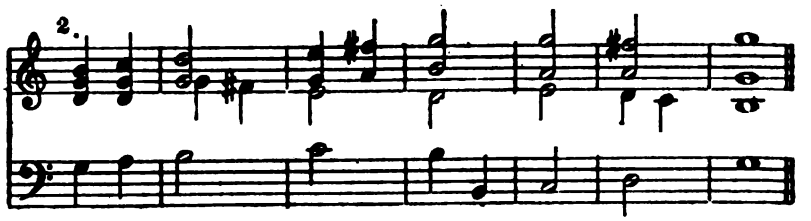
Suppose we have the following progressions,




have we modulated into the key of G? Each one must study his own feelings to determine. If one person says he has utterly given up the C-scale, and adopted the G-Scale, then for him it is a complete modulation. If another says he looks upon the F# as a substitute for F (producing the more agreeable *major* chord of D) and that he regards G as still the dominant, then for him it is no modulation. If followed immediately by this phrase,




which plainly lies in the C-scale, and the two passages are performed continuously, doubtless almost every one will read the first as lying in the C-scale, with the simple substitution of F# for F. But if the first phrase be continued thus,




the above, being read more easily in G, will react upon the closing part of the first phrase, and influence one to the adoption of the G-scale. That is to say, the closing part of the first phrase is *ambiguous,* and *ambiguous phrases are usually interpreted in the light of what follows.* This ambiguity of a phrase (as regards its key) is one reason why the first hearing of a composition is more difficult

than the second. When once familiar with the piece, the mind knows *where to fix its modulations.*

It is easier to modulate into the subdominant than into the dominant, (for example from C into F, than from C into G). For if the G-chord is emphasized, it may still be the emphasis natural to the dominant, but the emphasis of the F-chord (a comparatively subordinate chord in the C-scale) so disarranges the normal relations in the C-scale that F is very readily accepted as a new tonic.

Comparatively speaking, all such suspense of the mind is of infrequent occurrence, and of short duration, and familiarity with the composition results in assigning definitely to one scale or another many of those passages which at first hearing were ambiguous. Still, there is an exhilaration in such suspense when the mind is not thereby overtaxed, which is one of the many devices in the composer's art for preventing monotony.

The readiness or aversion of the mind to interpret an ambiguous passage in a new scale depends greatly upon a circumstance which must be spoken of. At the beginning of a piece one expects a clear announcement and somewhat prolonged maintenance of the scale, and very early in the composition any modulation is distasteful, as it evidently mars the unity of it; but after a time the original scale becomes monotonous, and then a new one is as refreshing as before it was repellant. The mind also becomes quickened in its action, as the piece continues, just as it does under any sort of exertion of its powers; and in this condition modulations can be effected with ease and delight, which otherwise would be laborious and painful. And in the climax of vigorous activity the mind can flit from scale to scale with most extraordinary facility.

We now proceed to speak of the different sorts of modulation, as a preparation for the pupil's own practice of the art.

Scales may be classified, as regards their relation to each other, into *allied* and *foreign* scales. This is for convenience, and not strictly accurate, as it suggests a radical distinction that does not exist, for nearly all the scales commonly spoken of as foreign to each other really possess various degrees of alliance. The alliance of scales consists in their having tones in common, and to a degree the greater the number of tones in common, the closer the alliance. Thus the scales of G major and F major are the most closely allied to C major, as the tones of each of them are the same as those of C, with one exception. The scale of D has two tones different from that of C. A has three tones, etc., until finally the scales of C and C# have not a single tone in common. Also those scales that have the most

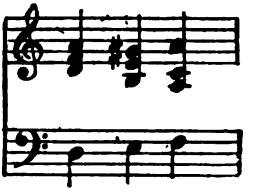
tones in common have several fundamental harmonies in common (compare those of C and G), while the less closely allied scales have only single tones in common.

As regards modulation into "foreign" scales, the different degrees of alliance counts for little or nothing, it being as easy to pass from the key of C to that of D♭ (these two scales having only two tones in common) as from C to D, which have five tones in common.

The scales of the dominant and subdominant of any key, together with the relative major or minor (as the case may be) of that key, are commonly known as "the related scales" of that key. Thus the "related scales" of C major are, A minor, G major and F major. The related scales of C minor are E♭ major, G minor and F minor. (Let the pupil name the "related scales" of several different keys, major and minor).

1st. *Modulation into the relative major or minor (as from* C *major* to A *minor, or vice versa*).

These two scales are so nearly allied that without effort one is able to hold both in the mind simultaneously. Their relation is much closer than exists in the case of any other scales. This closeness of relation is well illustrated by the fact that the *syllables* of the major scale (Do, Re, Mi, etc.) are retained for the same tones of the relative minor, so that the key note and the dominant of A minor are called "La" and "Mi", instead of Do and Sol. This is the case in the so-called "moveable-Do-system,"—the only sensible system, by the way—wherein the key note of every major scale is called "Do," and the fifth of the scale "Sol," etc. Of course, in the "immovable-Do-system," (in which C is *always* called "Do," D "Re," E "Mi" and so on, whatever the scale may be), the retention of the same syllables in the minor scale that are applied to the same tones of the relative major scale does not so signify the close relation of the two scales. The transition from a major to its relative minor, or *vice versa,* is well nigh imperceptible. Thus G♯, the characteristic tone of A minor, may be regarded as an incidental substitute for G in the scale of C, and the following chords,



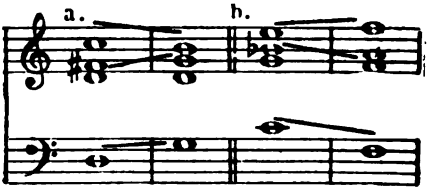
if occurring in a passage evidently in A minor, would be regarded as the common chords on the 4th, 5th and 6th of that scale; but if the

context was in C major, they would be thought to lie on the 2d, 3rd and 4th of that scale, with the use of G# to produce the stronger major chord of E. As a matter of fact, the relative major and minor scales so melt into each other that it is impossible to use the term Modulation in respect of these scales, as signifying as much as where there is a more radical and unequivocal reconstruction of the scale. The close alliance of these scales makes it possible for the major and minor complexion in faint degree to sweep in rapid alternation over the harmonies, like lights and shadows over a landscape, and the mind is not confused by the labor of a new scale-construction. Where one rhythmical division of a composition ends plainly in major or minor, and the next begins with the relative minor or major, there is a definiteness in the assertion of the new "mode" or quality that would be characterized as a genuine modulation. The full adjustment of the matter must be found by each student through the examination of his own feelings, as he listens to the alternation of these scales. The interplay of major and minor is perhaps most frequently illustrated in chorals, which it is advisable for the student carefully to study, and then compose simple modulations of the same sort.

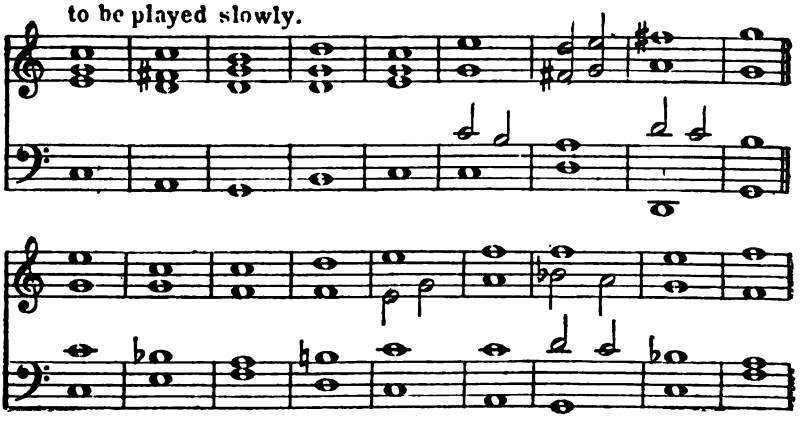
2d. *Modulation into the other "related" (dominant and sub-dominant) scales.*

A great many of the so-called modulations into the dominant and sub-dominant keys are in reality not so. A modulation is *completely* wrought in the mind only when a new tonic is indisputably necessary for understanding the harmonies. But the harmonies of the dominant and sub-dominant, and especially the former, having already frequent occurrence in the old scale, and thus capable of ambiguity, longer time is often necessary to give that unequivocal pre-eminence to either of these chords that shall lead the mind to a full modulation. Accordingly the precise point of modulation into these scales is very often indeterminate, and different minds will modulate at different points. The difference must be recognized between the mere *suggestion* of a new scale and its full *acceptance*, and there can be all degrees of emphasis in the suggestion, prior to its acceptance. A tonic-chord is emphasized not only by its own use, but by the use of its dominant-seventh chord, whose resolution is so naturally into the tonic-chord that one seems to hear the latter by anticipation, —a prophecy of the tonic in the dominant-seventh.

Thus

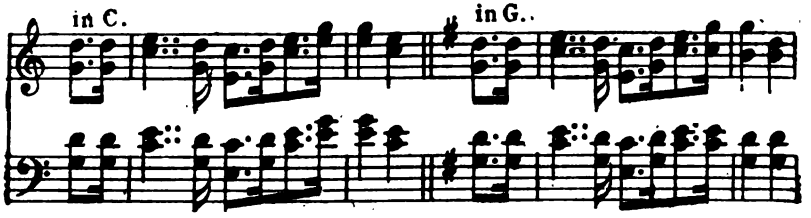



the first chord, on D, suggests the following G-chord. and so emphasizes it, and similarly the C-chord gives emphasis to the chord on F, by its almost inevitable resolution into that chord. Advantage is taken of this fact to emphasize the chord which it is desired shall be taken as the new tonic-chord, by having that chord precede which shall find its most natural resolution in the new tonic-chord; that is, *the dominant-seventh chord of the new scale.* Thus we see how the accidental (F# in the first case, B♭ in the second) helps to the emphasis of the following chord, and thus *assists* the modulation, while powerless of itself to *cause it.* The modulation at this point is as yet only suggested, even if the harmonies move slowly, and the emphasis of the new tonic-chord must be followed up, to effect a complete change of scale; and at what point the ambiguity ceases, it may be very difficult, and perhaps impossible to tell, thus:




Where similar harmonies follow each other rapidly there may be scarcely the suggestion of modulation, and if the sequel is continued in the old key, the mind, when it has become familiar with the music, will maintain the original scale, amid all the accidentals which, under other circumstances, would help to suggest a new scale. This is one of the ways in which a person understands a composition better on second hearing—he has learned how to interpret some passages which, as regards the scale, are ambiguous, and is helped in reading them by a knowledge of the sequel. If, as sometimes hap-

pens, a passage will give equal sense in the original and in the new scale, one person may read it in the new, another in the old; that is, one modulates, the other does not. Sometimes by a slight alteration, a passage that belonged plainly to the original scale can be read in the new scale, when that scale has become established in the mind, and a peculiar effect of identity and difference is produced, thus:

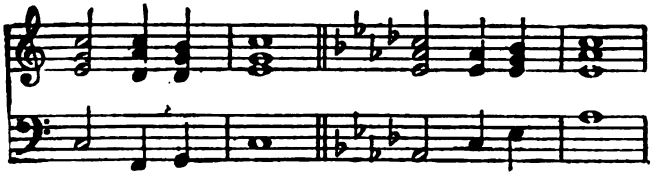



Let the pupil at this point continue his study of modulation in simple vocal and instrumental compositions, with special reference to the modulations into the dominant and sub-dominant of the original key, observing how they are sometimes instantaneous, sometimes gradual; and then let him connect simple chords in such manner as to bring him from his original scale into its dominant or sub-dominant. His first efforts may be crude, but with continued practice he will rapidly acquire the technique of the art.

3rd. *Modulation into the more remote scales.*

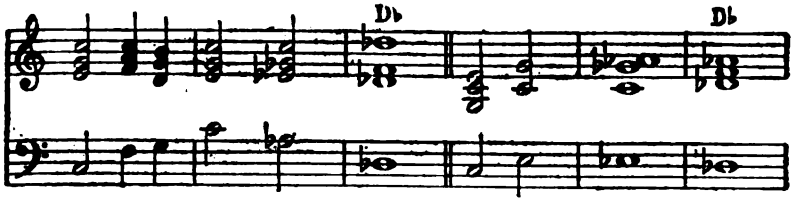
Modulation into the "remote" scales is much less frequent, but far more striking and beautiful, when properly introduced. As in such modulation there will be none of that ambiguity such as we find in going from tonic to dominant, there will be little or no difficulty in obliterating the old scale and establishing the new one, and in this respect this class of modulations is the easiest. On the other hand it is at the same time difficult to make a satisfactory modulation of this sort, for the reason that, the old scale being obliterated before the new one is established, the harmonies during the suspense must with special consistency and musical effect *cling to each other,* and so like a bridge bear the hearer over to the firm ground of a newly established scale. Such a modulation may be attained more or less quickly, according to the wish of the composer and the requirements of the situation; either

*1st, Instantaneously,*



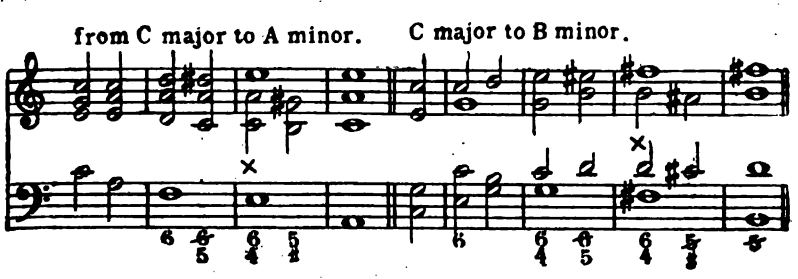
which is technically called a "transition," and occurs most frequently in passing from any major scale to that which lies a *major third below* (as in the example), and is most conclusive when the "transition" occurs at the beginning of a new rhythmical division of the composition; or,

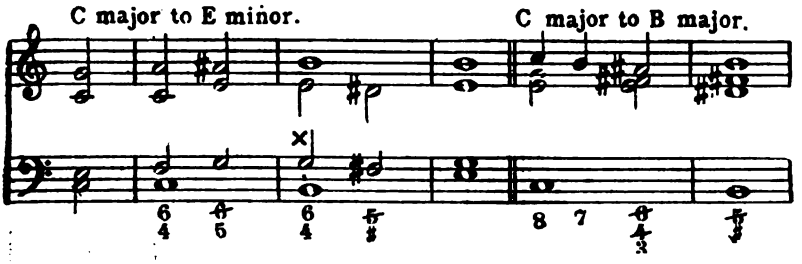
2d, *by means of one intermediate chord* (often the dominant-seventh chord of the new scale).



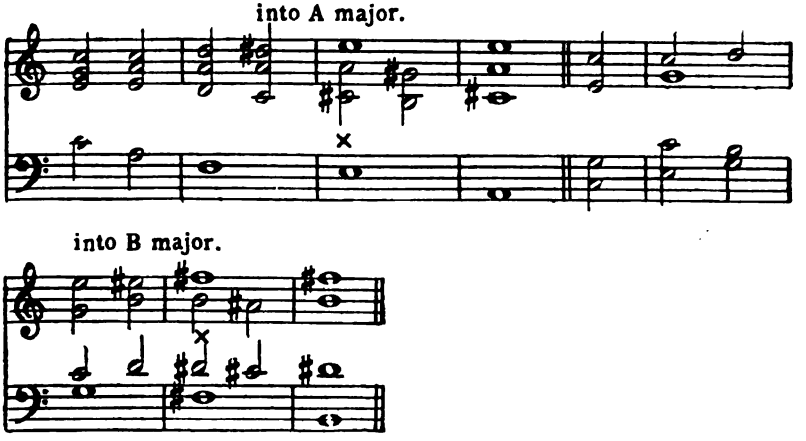

As a most serviceable intermediate chord we can avail ourselves of either of the chords containing an *augmented sixth* (the *augmented sixth*, the *augmented sixth-and-fifth*, and the *augmented sixth-fourth-and-third*), as the resolution of these chords brings us to a harmony which can readily be interpreted as the tonic harmony (often in the second inversion, as a $\frac{6}{4}$ chord) of a new scale. The pupil is advised to make a careful review of the chords containing the *augmented sixth*, and he will find that those founded on the third and on the sixth of the scale, which are unserviceable when the composition is to remain in the old scale, are very valuable as a means of modulating into foreign scales. But it is to be observed that when we modulate (as said above) by means of *one* chord, although the harmony following that chord is very naturally accepted as the tonic or dominant harmony of the new scale, yet the new scale is not so absolutely unequivocal, that violence is done to the feelings if the following harmonies bring us out into still another scale.

The use of the several chords containing an *augmented sixth* in effecting modulation is illustrated in the following:

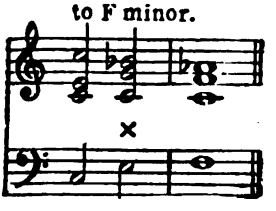


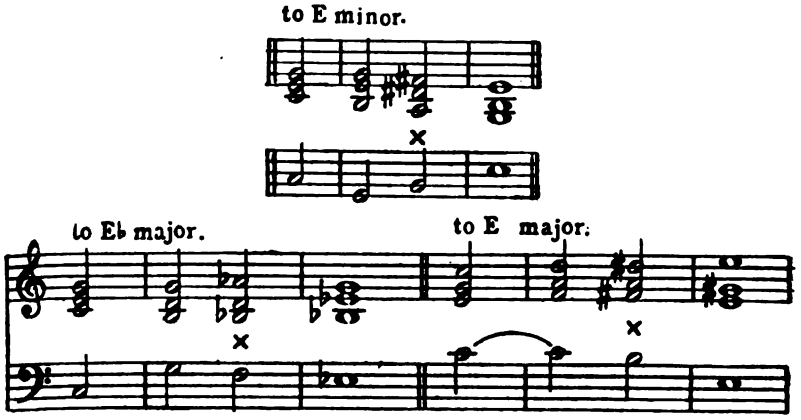



The modulation is effected at the $\frac{6}{4}$ chord into which the augmented chord resolves. If the pupil plays the examples *slowly* and *attentively,* he will feel the *root* of the chord to be the tonic, and the *bass* to be the dominant, of the new scale. By giving to this resolving $\frac{6}{4}$ chord a *major* third (instead of a minor as above), we modulate instantly into the major scales founded upon the same letters, thus:

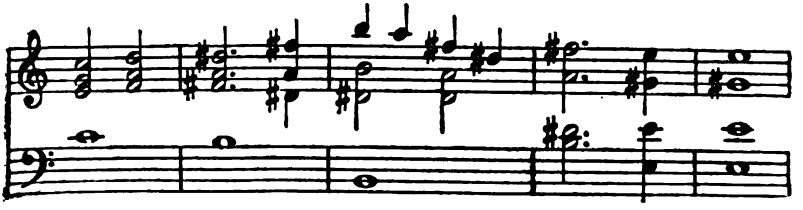



There are still other modulations through the intervention of a single chord:






The above modulations are not all equally successful in fully establishing the new scale. A modulation that is attempted with the intervention of only one chord is always more successful with a *slow movement* of the chords, as the mind thus has time to prepare for the change of scale. The *reiteration* of the intermediate chord, either identically the same, or with more or less change in the position of the voices, will usually make the modulation perfect; thus, the last of the above examples can be in this manner prolonged, yet without using any essentially new harmonies, and the modulation into E will be unequivocal, as follows:



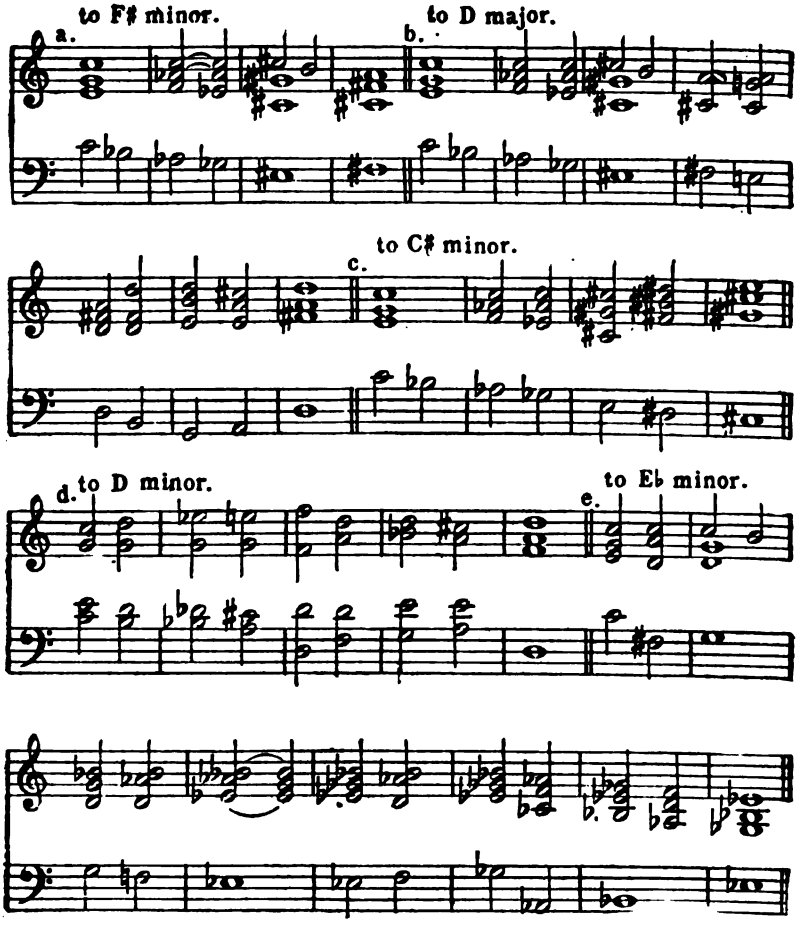
Any modulation which would appear hasty if the intermediate chord were at once followed by the new tonic harmony, can be made satisfactory by this method of reiteration and delay, and the pupil is advised to practice the art of prolonging the modulating chord, by changing the position of the several voices, with special attention to the melodic character of the soprano, which will divert attention from the sameness of the harmony.

3rd. *Modulation by means of more than one chord.*

No new principle is herein involved. Instead of accepting the next chord following the first foreign chord as the tonic or dominant of the new scale, the composer does not settle upon that key, but introduces one or more chords which compel the hearer to gravitate

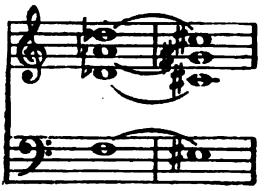
into a different scale from the one first suggested. Thus there may be a mere *glancing* at different scales, fully accepting only the last one into which the foreign chords lead, or sometimes there may be a distinct modulation into a new scale, followed immediately by a distinct modulation into still another. Circumstances must determine the propriety of this prolonged suspense and special effort of the mind. What would prove a shock to the feelings near the beginning of a composition, is often a pleasurable sensation afterward, to relieve the monotony. In many cases it will remain an open question whether there be several *distinct* modulations, or whether a number of new scales have been only more or less strongly *suggested.*

The following examples will suffice to illustrate this last sort of modulation.



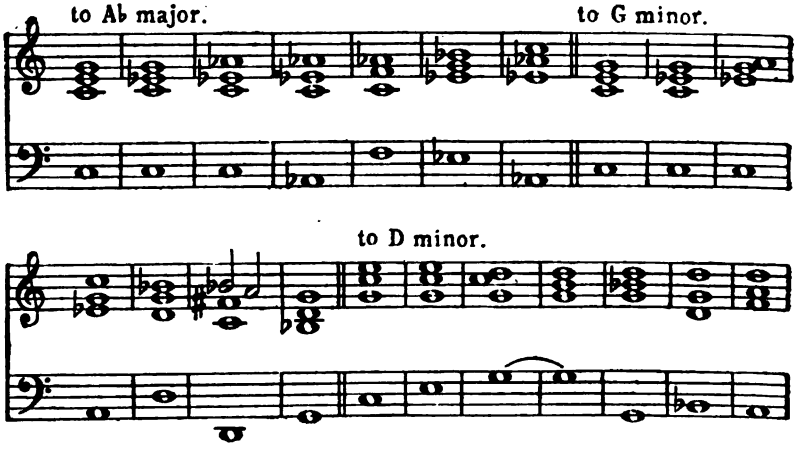
### Enharmonic Change.

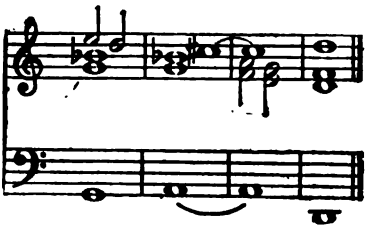
In the second measure of the foregoing illustrations (a) and (b), the tone that is expressed by A♭ in alto is continued in the next measure, but there expressed by G♯. This is for the sake of having the notation express to the eye the proper relation of the tone in the chord to which it belongs. The harmony of the third measure is a common chord founded upon C♯, the fifth of which chord is G♯, not A♭. Such a change is called *enharmonic change,* and may occur in several voices simultaneously, thus:



It is an interesting fact that even after a new scale has been perfectly established, and the old one apparently forgotten, there is still a lingering memory of it in the mind, so that it is easier to reassert the old scale again than to pass into any other. In accord with this fact is the requirement that in general a composition should end in the same scale in which it began, to maintain the proper unity of the composition; and yet, between the beginning and the end, the mind may have perfectly established itself in a dozen different scales.

Probably the simplest, least obtrusive, and most successful method of passing into a remote scale is by changing the *third* in the triad from major to minor, or from minor to major, in a succession of *slow* harmonies, thus:





By progressing slowly the mind easily adopts the new scale, but if the harmonies follow rapidly the modulation is too abrupt. This change is best made in the tonic-chord of the first scale, but it can also be made in the dominant and sub-dominant chords. If the pupil has had little or no practice in modulating, he is advised to find his modulations on the piano, starting with the key of C, and *wandering off* into other scales without predetermination as to the scale into which he will come out. Having found a good modulation from C into any other scale, let him then use the same formula in modulating from G and from other scales. This is exceedingly good practice, and he will soon modulate as readily from any scale as from C.

In connection with his own efforts in modulation, the pupil should also study the works of the best composers, to cultivate his taste for the finest methods of introducing new scales.

### SUMMARY.

The intelligibility of music requires what:—The predominant tones and chords of a scale:—The most important positions for chords to occupy:—How a scale is maintained:—Adoption of a new scale caused by what, and called what:—Modulation not dependent upon accidentals:—How ambiguous phrases are usually interpreted:—Why easier to modulate into sub-dominant than into dominant:—In what parts of a composition one has aversion and inclination for modulating:—Meaning of "allied" and "foreign," as applied to scales:—Which are called "allied" or "related":—Close relation of major and its relative minor:—Why the precise point of modulation into the dominant or sub-dominant is so often indeterminate:—A scale can be *suggested* without being *adopted*:—Why it is both easier and more difficult to modulate into the "remote" scales:—The most frequent case of "transition":—What chords especially serviceable in modulation:—Enharmonic change:—The old scale not utterly obliterated:—Modulation by changing major chord to minor, or *vice versa*.

## CHAPTER XIX.

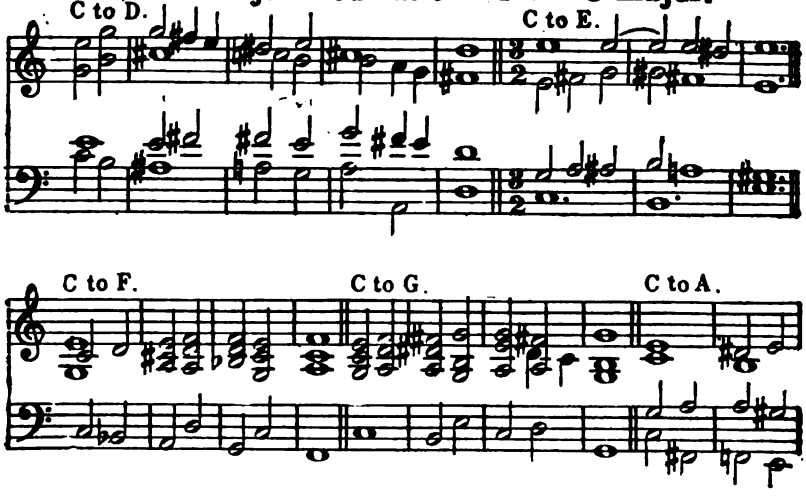
MODULATION (concluded). CHROMATIC CHORDS.

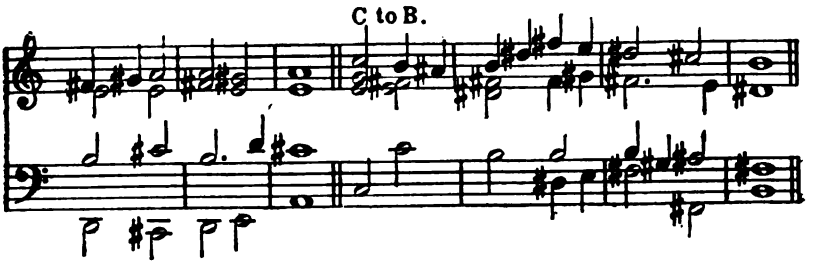
The varieties of modulation are inexhaustible, and a critical taste will reject all such as are crude and mechanical. The finest of all cannot be realized in a detached passage of three or four measures. Their appropriateness is recognized, and their beauty enhanced, by the circumstances under which they occur. The art of changing the scale is one that requires long and patient practice, as it admits of the greatest skill and delicacy. Its mastery can be anticipated only after the pupil has carried his studies far beyond the province of Harmony. The difficulties of the subject must be an incentive, not a discouragement, to the cultivation of a refined taste for this most subtle fruit of the composer's skill.

Formulæ of modulation are of little worth; at best they only illustrate the method and principle, and help the student to acquire the technique and spirit, of the art. The following illustrate the method of passing from C major to every other major scale, and from A minor to every other minor scale.

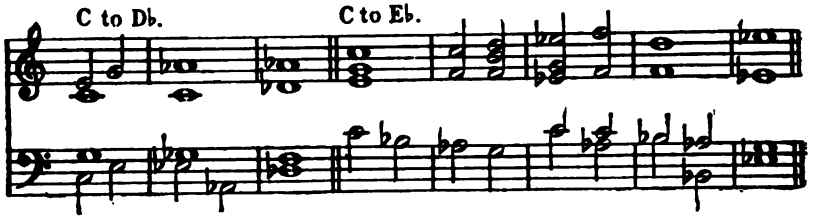
After playing them attentively, let them be transposed, by beginning upon other major and minor scales. The analysis of modulations in standard compositions is also excellent and interesting discipline. But above all the student is urged to develop his own power, in the discovery of other progressions whereby to reach related and remote scales.

**Six diatonic major modulations from C major.**

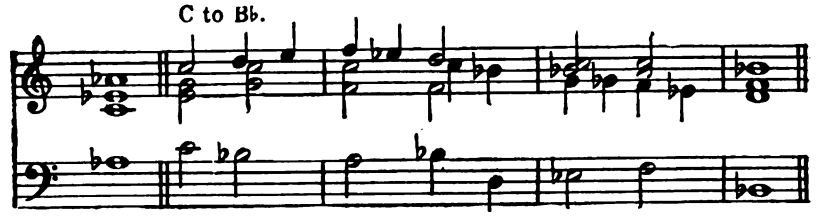




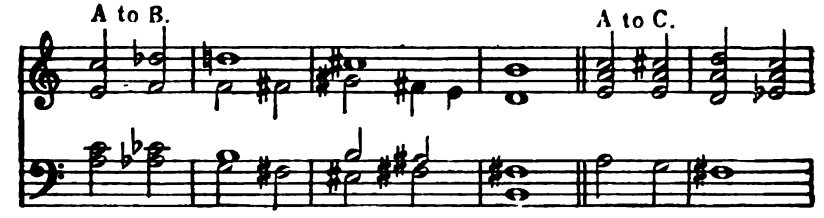

**Five chromatic major modulations from C major.**

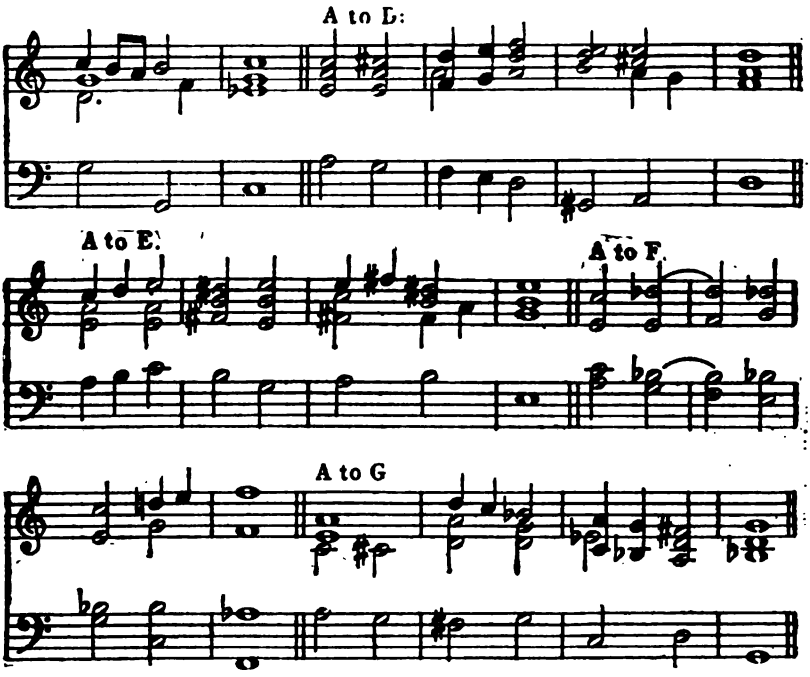




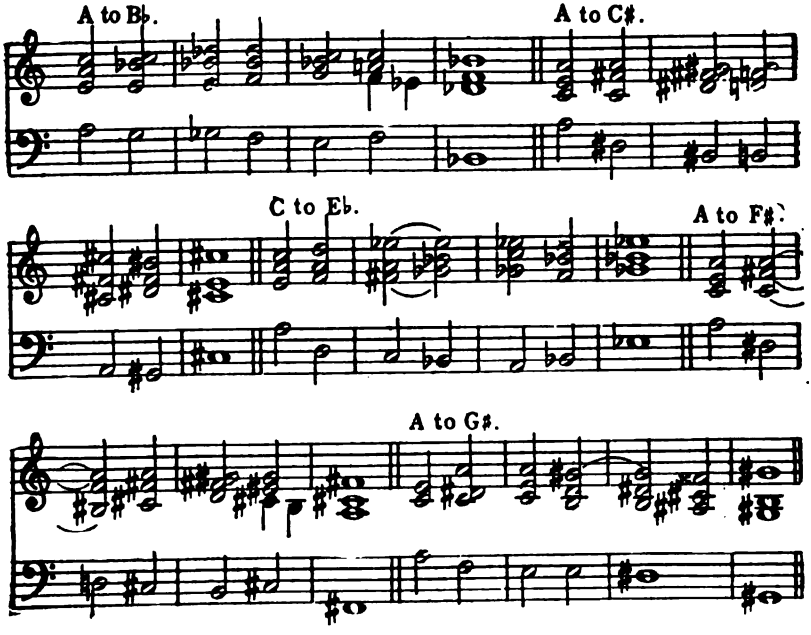



**Six diatonic minor modulations from A minor.**

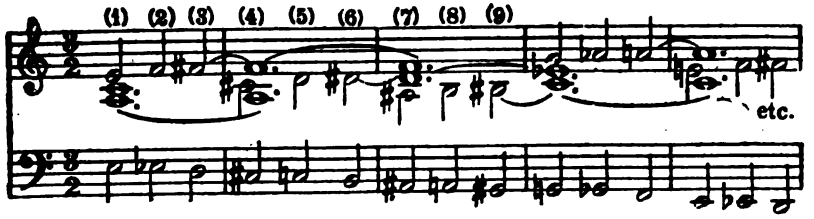




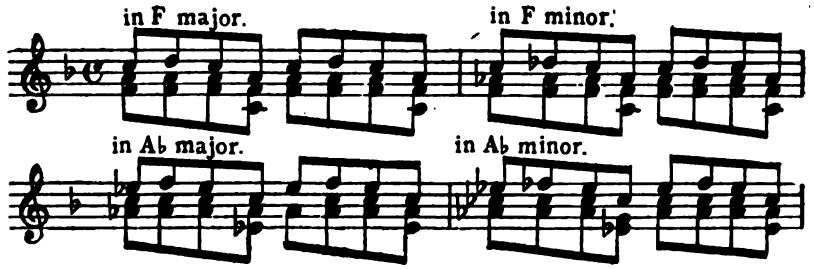

**Five chromatic minor modulations from A minor.**



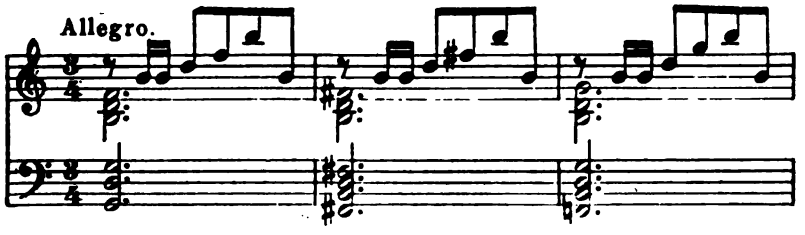
A very peculiar chromatic series of chords, favorable for modulation, is that in which the bass is a continuous downward chromatic scale, while the three upper parts alternately move in an ascending chromatic scale, the entire series consisting of the three chords, $\frac{6}{4}$, 2, 7, repeated over and over. Each chord can be the initial one for a modulation. Let the pupil determine into what scales he can pass from the several chords.

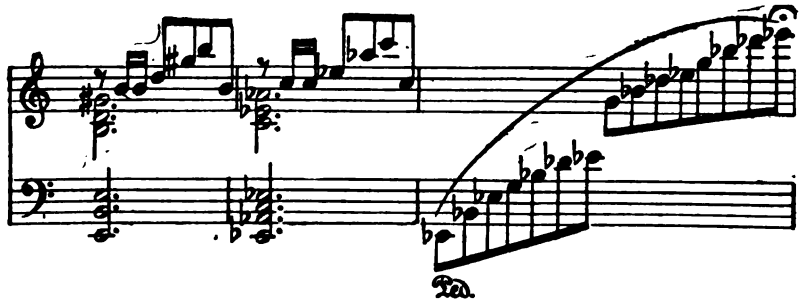



A quick transition from scale to scale is sometimes desirable, as in a sprightly movement like the following:

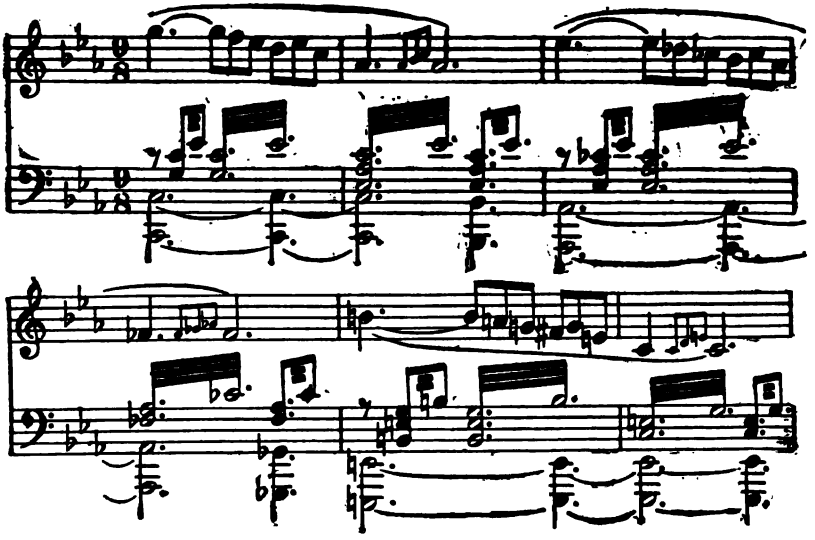



A slow harmonic movement, more or less elaborated, prolongs the passage into the new scale in a very effective manner, as in the following, where we pass from the key of C to that of Ab, the modulation being complete, although we have only reached the dominant seventh of the new scale. Indeed, the tonic chord of the new scale must, as a rule, be avoided until the scale is fully established.

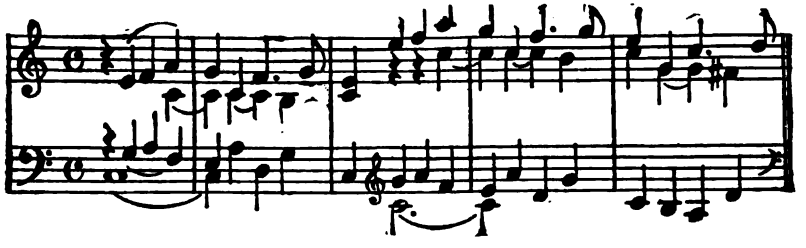


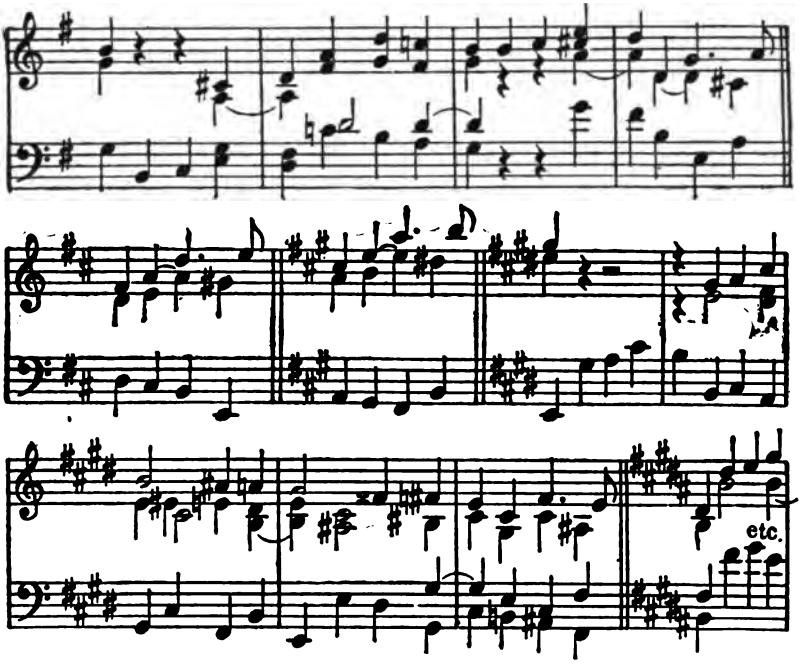



In the following, modulation is instantly induced by the fact that the mind regards the first chord of the second and of the third phrase as standing in the same scale-relation as the first chord of the first phrase. Hence A♭ minor and E minor are at once regarded as keynotes of new scales.



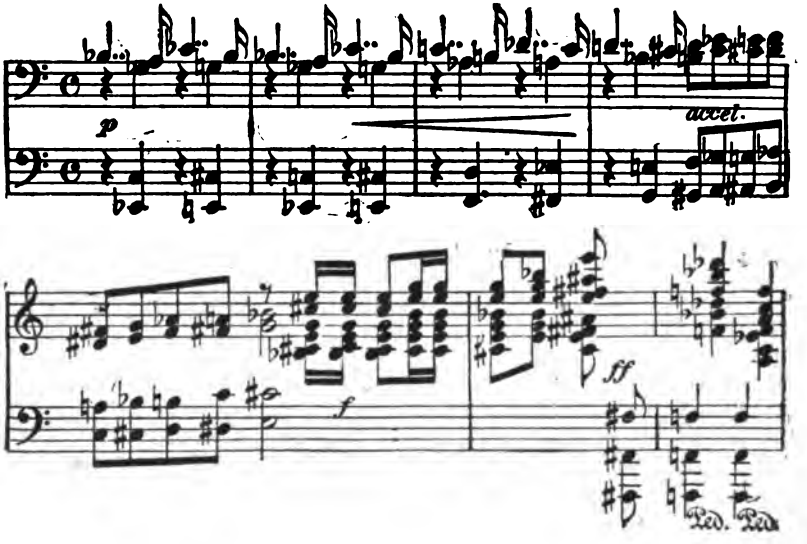
By successive modulations into the dominant, one can pass through the entire circle of scales, coming back to the original key. As examples of this sort of exercise see Beethoven's "Two Preludes," Op. 39. The first part of No. 2 is as follows:—



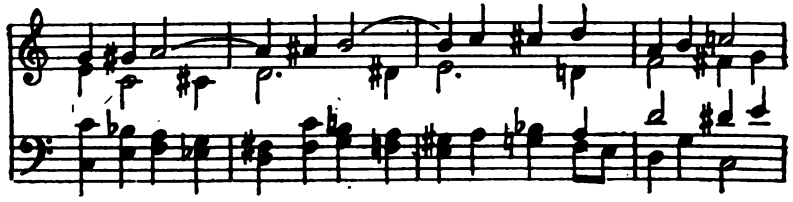



Such a form of composition cannot be a great work of art, but it is a profitable exercise for the student.

In some chromatic progressions one may lose, for a time, all idea of a scale, and at any point a scale may be established. Such suspension of all scale relation, however, can be only of rare occurrence and of brief duration.



Without producing a modulation, it is possible to use all varieties of chromatically altered chords, as follows:—



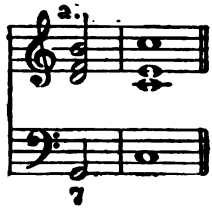
Let the pupil acquire all the skill possible in forming elaborately chromatic chords. Improvisation will lead to the discovery of many beautiful and striking effects. But it is an embellishment that is to be used with great discretion. Excess makes a composition florid, but weak and diffuse. Strength of musical thought, as of all other thought, has simplicity as a main element, and the enduring music of the world shows a masterly preponderance of the simplest harmonies. Learn to use chromatics—then learn to avoid them!

## CHAPTER XX.

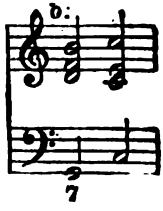
### CADENCES.

A "cadence" is a point of rest. The word means, literally, a "falling," and in its technical use involves the idea of the "gravitation of chords" to that one in the scale upon which the mind can completely rest, i. e., the tonic chord. The most complete cadence therefore consists of the tonic chord, emphasized by being preceded by that chord which leads most naturally into the tonic, and thus as it were expresses it by anticipation; i. e., the dominant chord. With the *seventh* added (forming the dominant-seventh chord) the resolution into the tonic is more emphatic, and the formula for the most perfect cadence possible is as follows:

Complete cadence,



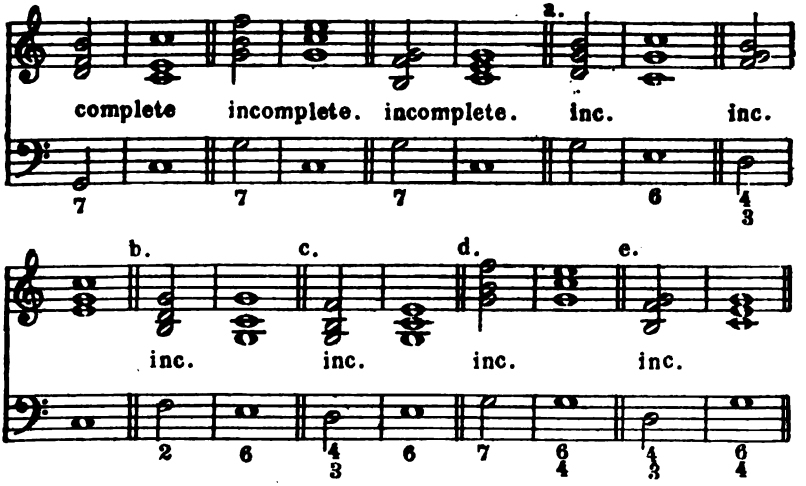

Not a cadence,



The essentials for the completeness of this cadence are that the tonic chord shall occur *in the accented part of the measure* (compare the above (a) and (b)), that each chord shall be in its fundamental position, and that the tonic chord *shall have the tonic in the soprano.*

THE AUTHENTIC CADENCE.

Any dominant or dominant-seventh chord (unaccented), followed by the accented tonic chord, constitutes what is called the "authentic cadence." This is in several varieties, thus:



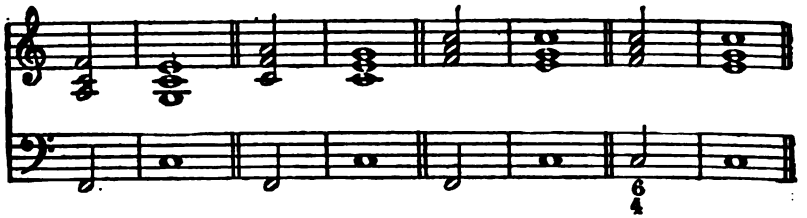

That is, any deviation of either chord from the formula expressed above (viz., the dominant or dominant-seventh chord, in fundamental position, followed by the *accented* tonic chord in fundamental position with the tonic in soprano) is still an authentic cadence, but is called *incomplete,* and the aforesaid formula is called the *complete* authentic cadence.

The above will suffice for the general classification of the Authentic cadences; but it is to be observed that the more we depart from the formula of the most perfect cadence, the less of a feeling of cadence (i. e., a point of *rest*) there will be. Thus there is very little of the cadence-feeling when the tonic chord is expressed in its *first inversion* (as at (a), (b) and (c) above), and such a use of the chords would hardly ever occur, where the effect of a cadence is required. When the tonic chord is expressed in its *second inversion* (as at (d) and (e) ), there is absolutely no cadence feeling, as the $\frac{6}{4}$ chord can never be a point of rest. To be serviceable as an "incomplete cadence" the tonic chord is almost

invariably in its *fundamental position.* The desirability of having different degrees of completeness in the cadence-feeling will be explained later.

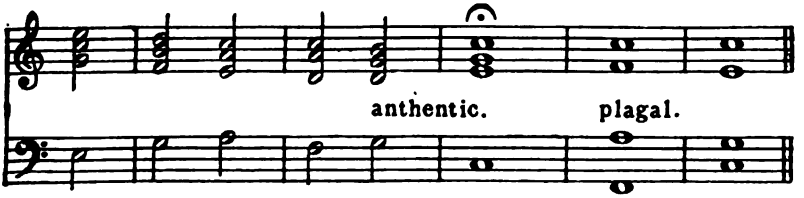
### The Plagal Cadence.

The unaccented sub-dominant chord, followed by the accented tonic chord, is called the Plagal cadence:



(These are all Plagal cadences, and the distinction of "complete" and "incomplete" is not so important as in the authentic cadences, but both chords are usually in fundamental position.)

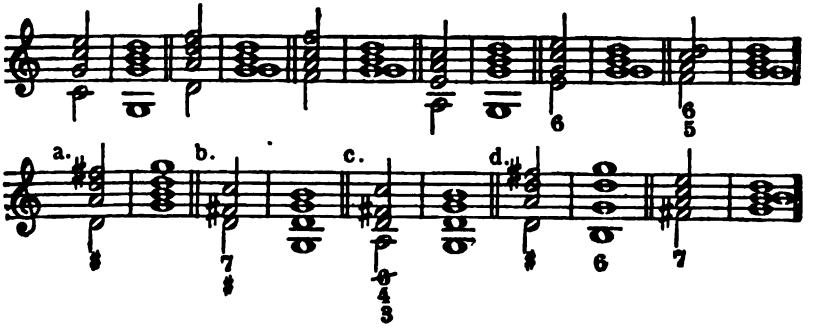
This cadence, as the close of a composition, is rarely used alone, but is generally preceded by the authentic cadence, thus:




This is also called the "Amen cadence," as it is the one commonly used for the "Amen" after the last verse of Church hymns.

### The Half Cadence.

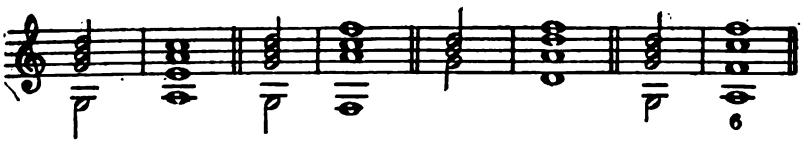
This occurs when the *dominant,* instead of the *tonic* chord, is placed in the *accented* part of the measure, and is preceded either by the tonic chord, or by any other that naturally leads into the dominant, thus:



We can rest on the dominant chord longer than on any other, except the tonic; and that form of the half cadence will give the strongest feeling of cadence, in which the dominant chord is preceded by such a chord as *leads most evidently into* the dominant, that is, when preceded by *its own dominant or dominant-seventh chord,* as at (a), (b), (c) and (d). This is not a *modulation,* as has been explained in the preceding chapter, but a casual use of the accidental, which of itself cannot produce a change of scale.

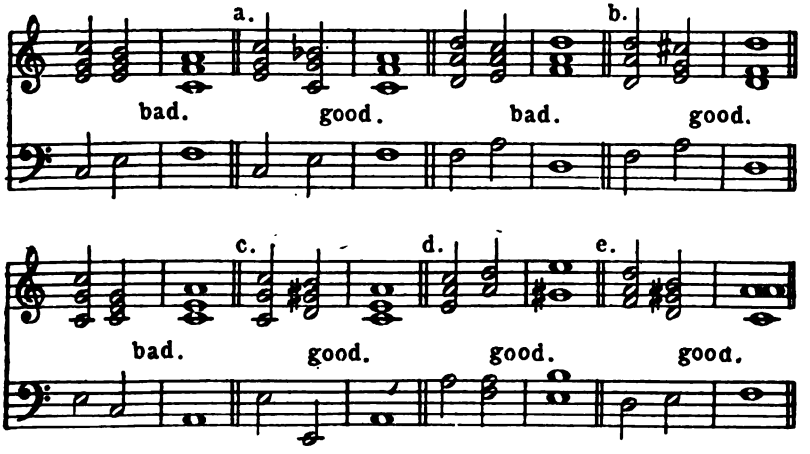
### The Deceptive Cadence.

This is produced when the unaccented dominant chord is followed by any other than the tonic chord; thus:




This is called a "deceptive" cadence, because the tonic chord is the one that most naturally follows the dominant, and the above progressions are somewhat unexpected. Yet the unexpected is not necessarily the *unsatisfactory,* but often, on that very account, the more pleasing.

In addition to all the foregoing cadences, a certain degree of the cadence-feeling can be produced by the use of *any* common chord in the scale, when preceded by a chord that *leads strongly into it.*

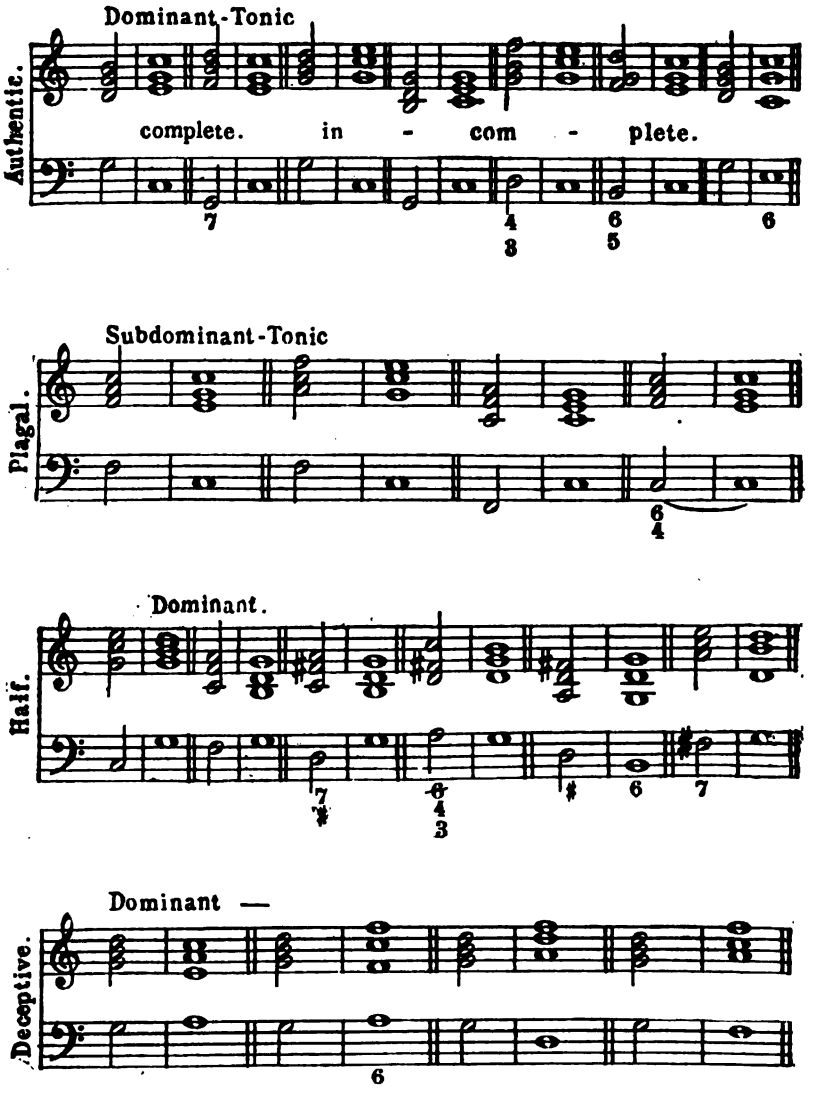


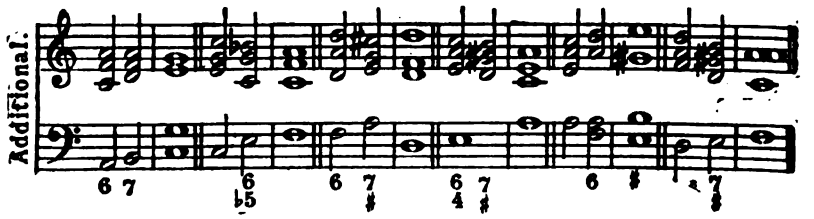

In (a) and (b) the final chord is emphasized in being preceded by a chord that almost inevitably leads into it, and thus a degree of

cadence-feeling is created. A major scale and its "relative minor," and *vice versa,* lie so closely together in the mind, that the passage from one to the other involves no effort, and (c), (d) and (e) may be felt, (c) as an authentic, (d) a half, and (e) a deceptive cadence, in A minor.

Below are presented all the different kinds of cadences.

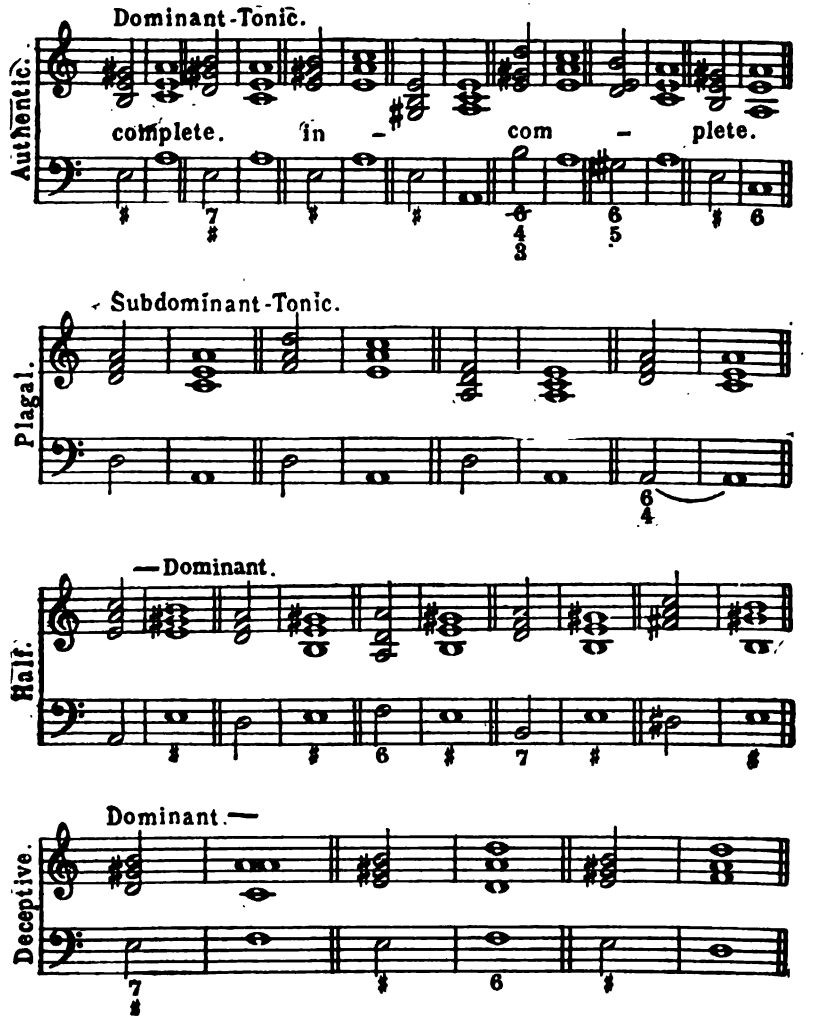
CADENCES IN C MAJOR.

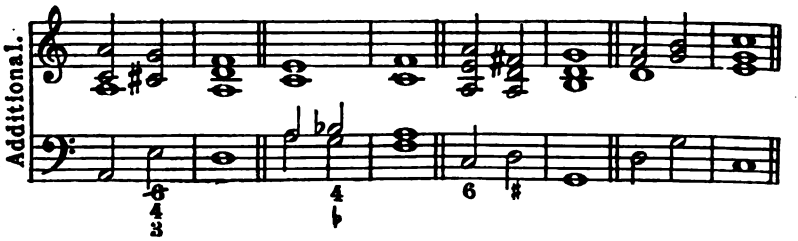





The last three may be regarded as respectively authentic, half, and deceptive cadences in the scale of A minor.

CADENCES IN A MINOR.






The last two are inconsistent with the scale, inasmuch as the "leading tone" (G♯) is sacrificed. Nevertheless they can be used in a composition in this scale, and may be regarded as, respectively, a half, and an authentic cadence in C major.

The practical use of cadences will be best understood by first understanding that a musical composition is not a constant and uninterrupted succession of harmonies, from beginning to end, like the incessant flow of a stream. A musical composition is an orderly succession of different musical ideas, variously related to each other, *conjoined,* and yet to a degree *disjoined.* It is analogous to a literary composition, the several thoughts of which are also variously related to each other, *conjoined,* and yet to a degree *disjoined.* Thus the literary composition, taken first in its entirety, at once falls into a certain number of *chapters.* Each chapter has its subordinate divisions in the form of *sections,* or paragraphs, and within each paragraph every complete idea takes the form of a sentence. Lastly each *sentence* is usually so complex as to contain a greater or less number of those ultimate organic fragments of an idea, each of which is called a *phrase* or clause.

Thus we find that the grand idea, expressed by the entire composition, literary or musical, is minutely subdivided; and the mind, in the conception or in the reading of the work, finds a point of rest in the progressive development of the idea, wherever it finds a distinct, although it may be a very minute, completion of that idea, in any of its most subordinate details. Thus the mind is frequently finding the *cadence* throughout the entire composition. And the cadences, or points of rest successively sought and gained, are always commensurate, in their duration or intensity, with the relative importance of the fragmentary ideas to the grand idea. The marks of punctuation—the period, colon, semicolon, comma—in a measure express to the eye the relative duration of the rest or cadence. Absolute rest, with no effort of the mind beyond, can come only with the completion of the work. This absolute rest is found only in the "complete authentic cadence," the "full period" of the whole idea.

The foregoing cadences are very unequal in the degree of the cadence-feeling excited by them, and are thus adequate to the various demands for cadence in the development of the musical idea. It is not to be supposed that the various chord-connections in the foregoing list of cadences *always* produce the cadence feeling. Many of them are used frequently without any sense of a cadence. The rhythmical structure of the composition in a degree creates the demand for a cadence at certain points, and the inherent cadence quality of certain chord-progressions thus re-inforced by the rhythmical demands creates the sense of cadence in the mind. That is to say, the cadence-form and the rhythmical movement are conjointly operative in producing the sense of a point of rest. For example, the dominant chord occurring in the beginning of a measure, and preceded by whatsoever chord, cannot invariably create the cadence feeling, and yet such a chord-progression constitutes the "half cadence" formula. But if the rhythmical structure demands a cadence, the above formula is at once felt to be a point of rest. The rhythmical movement and the cadence formula *must conspire together.* And the less of the inherent cadence quality there be in any chord-progression, the more is the rhythm determinative of the sense of cadence in that progression. The mutual interaction of the rhythm and the cadence formula can be learned only by practice. But the foregoing table of cadence formulæ should be carefully studied, as only in these formulæ does there exist *any of the inherent cadence quality.* The pupil is also urged, after mastering the above table, to study chorals, which more clearly illustrate the doctrine of cadence than any other form of composition. Each line of a choral closes with one or another of the cadence forms, and the success of a choral depends in no small degree upon their judicious alternation. Other kinds of composition can also be studied in respect of the use of cadences, but this presupposes some knowledge of the art of constructing a composition, which is learned by the study of "musical form."

As the concluding exercise of this chapter, let the pupil write examples of all the different kinds of cadence in several different keys, major and minor.

### SUMMARY.

Meaning of cadence:—The formula of the most complete cadence:—Authentic cadence, complete and incomplete:—Plagal cadence:—Its use with authentic cadence:—The half cadence:—The most complete half cadence:—The deceptive cadence:—Why so called:—Analogy between a musical and a literary composition:—

Where does a cadence occur in both forms of composition:—Intensity of a cadence commensurate with what:—Cadence feeling not always produced by cadence formula:—What must co-operate with the cadence formula to produce the cadence feeling:—The use of cadence in the choral.

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In conclusion, a few words as to the treatment, in the foregoing work, of the voices or parts, as compared with their treatment in practical compositions, vocal and instrumental, such as solos, duets, trios, choruses, sonatas, symphonies, etc. The divergence of such works from the form of all exercises in this book is so great as to induce the feeling in many minds that there can be little or no relation between the one and the other, and the undeniably good effect resulting from the violation of certain rules that are invariably insisted upon in a text-book of Harmony (such as the use of octave passages) tends to weaken one's faith in the validity of such rules. The confusion all arises from a mistaken idea as to the real scope of "Harmony," and the legitimate application of its rules. The essentials of harmony are taught therein, but not the numberless details of effect which in their place are legitimate and necessary. The foregoing work teaches only *how to secure the fullest harmonic effect with four voices.* But there are many other effects highly desirable in music beside the "fullest harmonic effect of four voices." The prolonged use of four parts in this manner would soon become extremely monotonous. For variety of effect and relief to the mind, the four parts must sometimes be treated differently, and sometimes a less, and sometimes a greater number of parts must be used. The greatest aggregate of musical effect is secured by proper variety and alternation of means. So that there is an important place for unisons and octaves, for solo, duet, and trio, for full chords and for absolute silence, as well as for the "fullest harmonic effect of four voices." The acomplished composer must be familiar with every device that shall enhance the effect of melody and harmony, with every grouping of the tone-colors, with all lights and shadows that shall help to realize the tone-picture. In view of such a goal, the work accomplished by a "text-book of Harmony" seems almost insignificant. In one sense it is. But the essential principles of all harmonic combination—the most important thing of all—are therein learned, and the student now stands one step beyond the threshold of the art.

Before proceeding to the next department of theoretical study—that of Counterpoint—it is in most cases very advisable for the

student to make a thorough *review* of the entire subject of Harmony. By so doing, he will be amply rewarded in the more complete understanding of all the fundamental and auxiliary chords, in their construction and connection, which is the requisite preparation for success in musical composition.

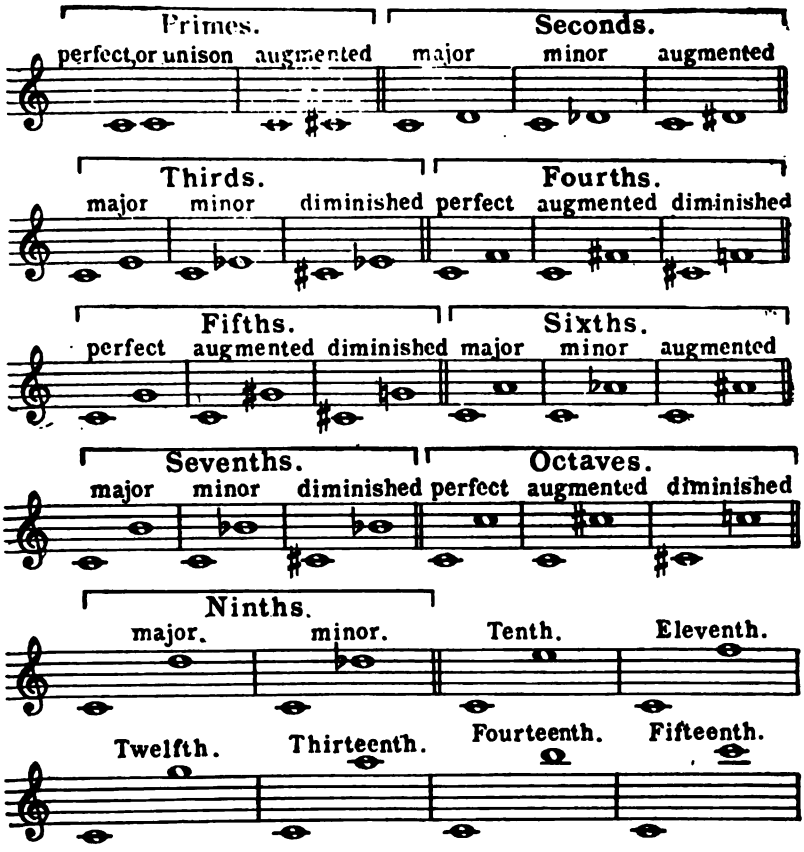
In making a review, it will only be necessary to write so many of the exercises in each section as will give proof that the subject-matter is fully mastered; and it will be much more profitable to use the basses as exercises in "sight-reading," for this will give a mastery of the chords such as can never be attained by merely writing them. In the review, it will be found that the sense of the chords can be imagined much more easily and accurately than before; and, as a final word of counsel, the pupil is urged to cultivate still more assiduously this power of *knowing the effect* of chords without playing them; for without it, any satisfactory progress beyond the province of Harmony is impossible.

# APPENDIX.

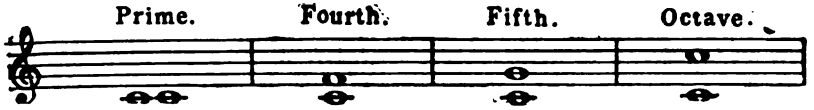
The discussion of questions having a purely *theoretical* interest, and without any practical application, in the study of Harmony, does not properly belong to the body of such a work as this, and has therefore been reserved for the Appendix. Other questions, of undoubted value to the more advanced harmonist, but of doubtful utility to the beginner, also find here their solution.

## (A)

### Full List of Intervals.

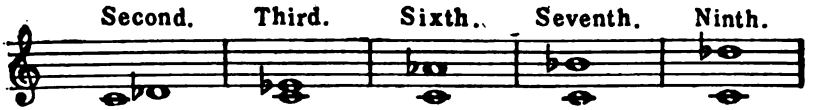


Perfect intervals.

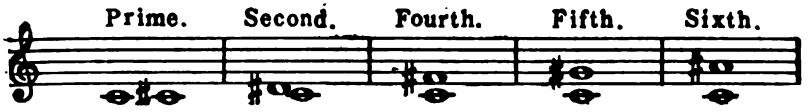



Major intervals.

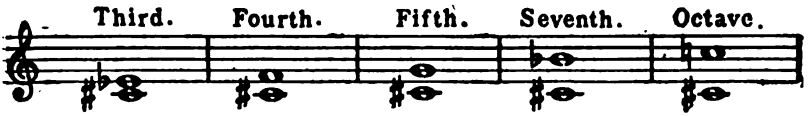

Minor intervals.




Augmented intervals.




Diminished intervals.




For all simple harmonic purposes the intervals of a *ninth, tenth,* etc., are the same as a *second, third,* etc., and are commonly so named. In "Suspension" the *ninth* is distinguished from the *second,* and in the later study of counterpoint, the *tenth* and *twelfth* are sometimes distinguished from the *third and fifth.* But with these slight exceptions all intervals are reckoned as within the limits of an octave.

(B)

REASON FOR THE GENERAL USE OF FOUR-PART HARMONY.

As the fundamental combination of tones in Harmony is the "common triad," it might be supposed that our elementary chords would be "three-part harmony." This is not the case. The determining factor in this matter is the consideration that such a number of parts will inevitably be adopted for *general* use in both vocal and instrumental music as will afford the most satisfying fulness of harmony, combined with the requisite simplicity and transparency of the chords, and distinctness of the individual parts. The number of parts in the chord can be increased indefinitely, but

beyond a certain point such increase tends to produce *fulsome* harmonies, and a sacrifice of simplicity and distinctness. A reduction, beyond a certain point, in the number of parts, on the other hand, makes the harmonies *thin,* and the remaining parts correspondingly *obstrusive.* The oppressive richness of *full chords* is replaced by an equally oppressive poverty of *scant* harmonies, and what was before well-rounded, through the abundance of the parts, becomes angular through their scarcity.

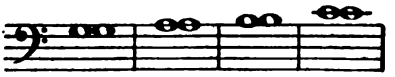
In view of all the requirements, the most satisfying effects are produced by *four-toned harmony.* This is not to the exclusion of five, six, seven, and eight-part harmony, on the one side, or of three and two-part, on the other side, but in the nature of things four is the normal number. Even in the florid harmonies of orchestral music, we find a substratum of four parts, giving the basal chords on which the elaborate superstructure rests. Our vocal music is not in four parts because we have soprano, alto, tenor and bass. On the contrary, the Creator has furnished us with this fourfold pitch and quality of the human voice to meet the harmonic requirements of our nature. And in instrumental music the acme of pure harmonic enjoyment is found in the "string quartet."

(C)

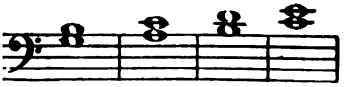
WHEREIN THE DISTINCTIVENESS OF THE PARTS CONSISTS.

One of the satisfying elements of harmony is the distinctiveness of the several parts. This distinctiveness is three-fold, viz., distinctiveness of *pitch,* of *direction of movement,* and *of rhythm.*

Suppose the bass and tenor are as follows:

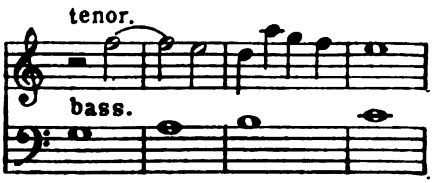


There is here no *distinctiveness* at all. The voices are in unison. The tone is stronger, but the two individualities are merged into one. But in the following,



there is the first element of distinctiveness, that of *pitch,* but their movement and rhythm are alike. In the following,

the two voices assert their individuality still more by unlikeness in their *direction of movement;* and in the following,



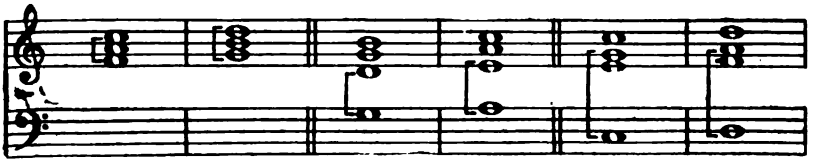

we find the three elements of distinctiveness combined, viz., ***pitch, direction of movement, and rhythm.*** Only in these three ways can the different voices or parts assert their individuality.* In the exercises of Harmony, and in the choral style of composition, the individuality of the voices is almost exclusively confined to ***pitch*** and ***direction of movement,*** with little variety of *rhythm.* The highest voice alone is treated as a melody, and the under voices have little more than harmonic significance. The fugue, on the other hand, is the highest form of harmonic writing, because each voice is treated ***melodically,*** and in addition to the individuality of ***pitch*** and ***direction of*** movement, is also as ***rhythmically distinct*** as possible.

(D)

THE REASON FOR THE PROHIBITION OF PARALLEL PERFECT FIFTHS.

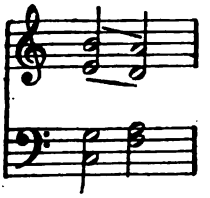
The objectionableness of *parallel perfect fifths* is evident, but harmonists have ever found it impossible to understand and state clearly the reason for the objection. The following statement does not pretend to be original, or less abstruse than previous efforts of other writers.

Every chord in fundamental position has its boundary line or circle expressed by its *root* and *fifth.* The proper connection of chords requires a sort of *resolution* or *flow* of one chord into the next; but when any two voices express the fundamental and fifth in two successive chords, the boundary circle of each chord seems rigidly maintained, the harmonies are in *contact,* but they do not coalesce, thus:

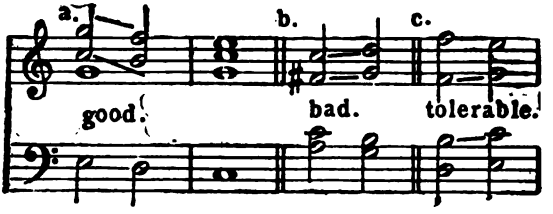


*This is presupposing the same *quality* or *tone-color* in the parts or voices. Variety in this respect affords another valuable element of distinctiveness, to be sure, but we are here concerned only with the elements involved in harmonic structure.

In seventh-chords, the occurrence of successive *perfect fifths* between any two voices, even though one of the fifths intervene between other than the root and fifth of the chord, will also prevent the *coalescence* of the chords, thus:



In the *diminished fifth* there is not the same effect of a boundary circle, and it can be made to *follow* a *perfect fifth* (a); yet the effect is not good if it *precede* the *perfect fifth* (b); still the progression from diminished to perfect fifth is by some good writers allowed between the *inner parts* (c).




The foregoing statement concerning *parallel fifths* is far from conclusive. This is frankly confessed. The designation of the *root* and *fifth* as the "boundary circle" of the chord is somewhat fanciful. The exact truth of the matter eludes our grasp. We wait for some more discerning eye to detect it. But the foregoing statement expresses enough truth to put one upon the track of more truth than he can define in language, and however vague or erroneous our explanation of the matter may be, the sense of the *lack of coalescence,* the *antagonism,* of such chords, remains common to all.

## (E)

### Analysis of the Scale-Tones, as Regards the "Leading" Quality.

The following analysis is based upon the nature of the several tones *purely in their scale-relations.* From their relations in *harmony* they may acquire very different "leading" qualities. Let the scale be played slowly and attentively several times, and the inherent quality of each tone in its *scale-relation* will be established. Then let the different tones be struck again, not in the order of their occur-

rence in the scale, but as it were at random, and the following statements will be verified.

The *Tonic* is the only one which has the quality of *absolute rest* with no "leading" quality at all.

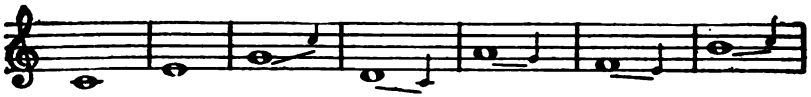
The *third* and the *fifth* approach nearest to the Tonic in the quality of rest, but it is not absolute. The *third* is not at all suggestive of any tone to follow, but in the fifth there is a dim foreshadowing of the Tonic.

The *second* and *sixth* are restless; somewhat equally poised between the adjacent tones, but with the slightly stronger inclination to the tone below, i. e., the tonic and dominant respectively.

The *fourth* has an evident inclination to the *third.*

The *seventh* is the most restless of all the tones, and points emphatically to the *eighth.*

The "leading" quality, in its increasing force, is found in the foregoing order of the tones as follows:

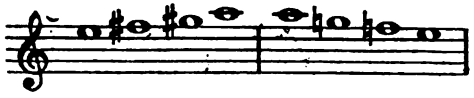


As before remarked, *their relations in the harmony* may entirely change the leading quality of all the tones.

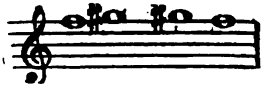
(F)

REASON FOR THE TWO FORMS OF THE MELODIC MINOR SCALE.


The difference is comprised within the upper four tones,

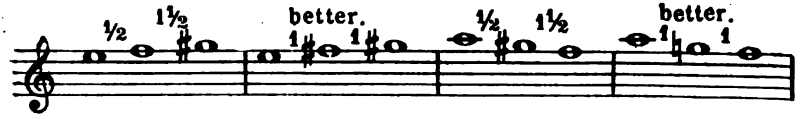


and arises from the preponderating importance of the "leading tone" in the *upward* scale, and of the *minor sixth* in the *downward* scale, both of which tones are essential to the complete satisfaction of the Minor scale, but on account of the gap between them

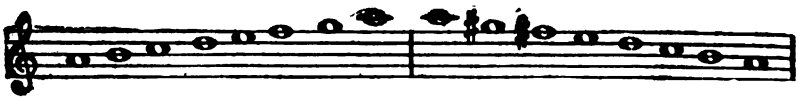


one is sacrificed to the other, so as to secure a more melodic pro-

gression, by the avoidance of an *augmented second,* and by a more equable division of the distance from E to G#, and from A down to F, in having two successive intervals of a *whole tone* each, rather than a half tone followed by a tone and a half, thus:




It remains to be considered why the *minor sixth* is sacrificed to the *major* seventh in the *upward,* and not in the *downward* scale; and why the *major seventh* is sacrificed to the minor sixth in the *downward,* and not in the *upward* scale, so that the following forms are unsatisfactory:

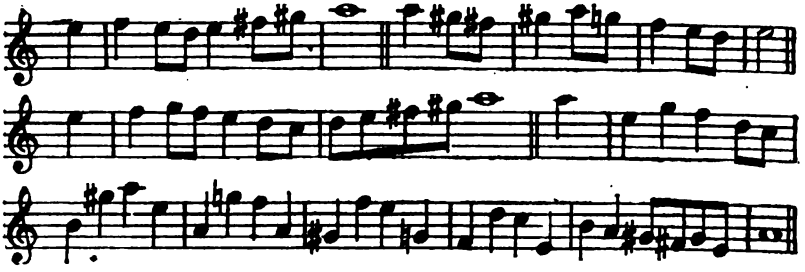


although they are quite as melodic as the same scales in reverse order.

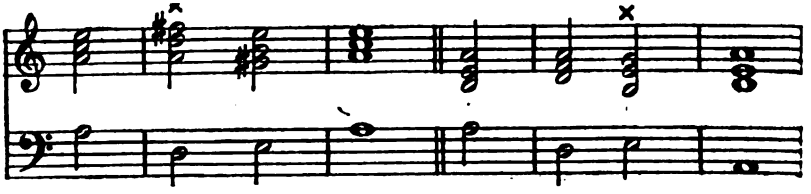
The two distinguishing characteristics of the Minor scale are the *minor third,* and the *minor sixth,* and both of these intervals must be maintained to preserve the consistent minor quality of this scale. But the stability of any scale depends primarily upon maintaining the pre-eminence of the *Tonic* of that scale; and that pre-eminence is largely secured by the emphasis it acquires from the *major seventh* of the scale in its leading quality, finding its "rest" in the tone to which it points, that is, the Tonic. Therefore when we pass from the *seventh* to the *eighth* we have impaired the integrity of the scale, unless we find that emphasis of the *eighth* which comes from the "leading" quality of the *major seventh,* which helps to assert the eighth as a Tonic. If then the *minor sixth,* which is a characteristic of the minor scale, comes in conflict with the *major seventh* (for the *minor seventh never* "leads"), then the *minor sixth* must be *in a measure subordinated* to the *major seventh,* and the ear accepts the *major sixth, when the seventh is to be followed by the Tonic.* This accounts for the *major sixth* in the *ascending* scale. But when the movement is downward from the Tonic, and thus there is no demand for that quality in the *seventh* that shall "lead" to the Tonic, the necessity of the *minor sixth* outweighs the demand for a *major seventh,* and the latter is sacrificed to the former.

The true minor scale is the *harmonic form.* The *major sixth* and the *minor seventh,* that are found in the *melodic forms, occur* only as the result of *compromise.* The various subordinations of the

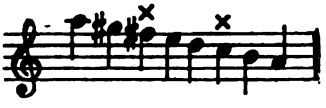
***sixth*** to the ***seventh*** and of the ***seventh*** to the ***sixth*** are illustrated in the following:



But with all this apparent sacrifice of ***minor sixth*** and of ***major seventh,*** it is to be observed that it is never as the true ***harmonic*** tone that the ***major sixth*** or the ***minor seventh*** occurs, but only in the inconspicuous manner of a "passing" or "auxiliary" tone (see Chap. XV). The incongruity of using them as ***harmonic*** tones is seen in the following:



The incongruity of associating the ***major sixth*** and the ***minor third*** is plainly felt in playing the following, especially if the two intervals are emphasized:



It seems inconsistent that the same incongruity is not felt in the ***ascending*** melodic scale. It certainly is not, and the reason is doubtless in the fact that in the upward scale the gravitation is strongly toward the Tonic, and the mind instinctively accepts the ***major sixth*** as a temporary compromise to the "leading tone," and lays little stress upon its major quality. In the foregoing downward scale, however, there is a plain assertion of the ***A-major*** scale until we reach C, which as a minor third, is a flat contradiction to A-major.

## (G)

### INVERSION.

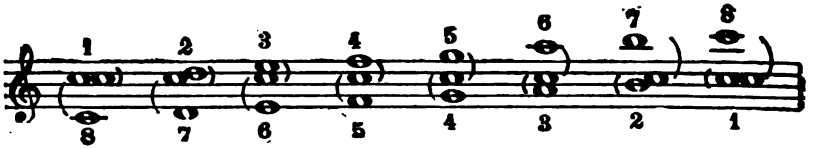
The ***inversion*** of a voice is its transposition ***to the other side of*** an accompanying voice. The most common interval of transposition

is *the octave,* but any other interval can also be used. In all the following illustrations, *the octave* (which means one, two or any number of octaves) is the interval of transposition, unless otherwise specified.

The following shows the inversion of the lower voice above the upper, and of the upper below the lower:

It will be seen that the *resulting interval* between the voices is the same, whether the lower or the upper voice be inverted.

The following shows the result of inverting the upper or the lower of two voices standing at the successive intervals of the diatonic scale:

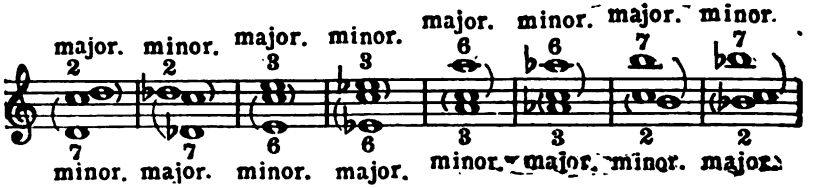



The original and resulting intervals are expressed by the following series of numbers:

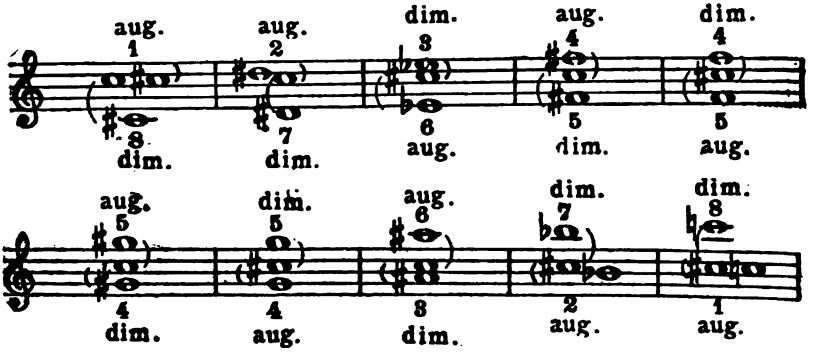
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |

thus a *prime* becomes an *octave;* a *second* becomes a *seventh;* a *third* a *sixth,* etc., and the sum of the original and inverted intervals is always 9. Thus the larger the original interval, the smaller will be the inverted interval, and *vice versa;* also the larger size of one interval inverts into the smaller size of the other; hence a *major* interval inverts into a *minor,* and a *minor* into a *major,* and a *diminished* into an *augmented.*

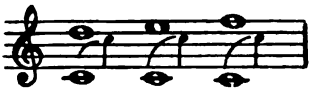
*Major* into *Minor,* and *vice versa.*



*Augmented* into *Diminished,* and *vice versa.*

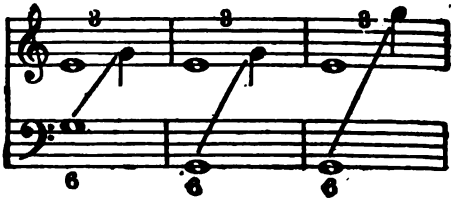



It is evident that unless the two voices are within an octave of each other, the transposition of either of them by a single octave will not result in an inversion:



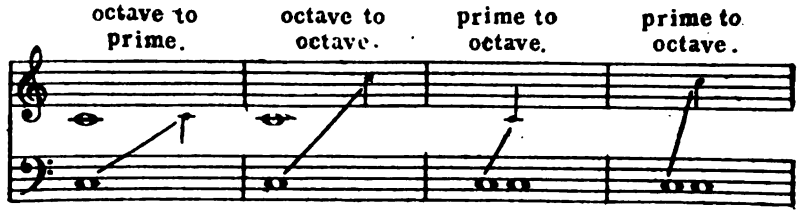
thus a *ninth* becomes a *second;* a *tenth,* a *third,* etc., and the resulting interval is essentially the same. But if the voice be transposed two or more octaves, an *inversion* is secured, and the resulting intervals are either identically or essentially the same as when either of the voices, within the limits of an octave from the other, is transposed a single octave; thus:

Transposed one octave. Transposed two octaves. Transposed three octaves.



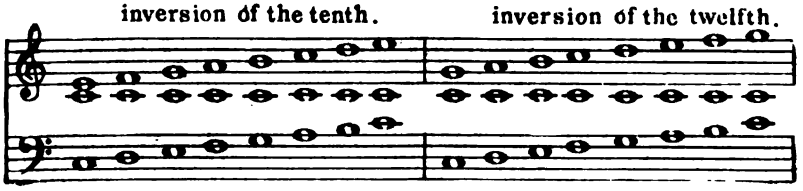

In all the above inversions the upper intervals are either absolutely or essentially *thirds,* and the lower intervals are either absolutely or essentially *sixths.* So that what may be called the *octave inversion* invariably produces such an interval as, in its relation to the original interval, is expressed by the same number as if the voices were within an octave, and inverted by an octave.

The *octave* does not invariably become a *prime* by inversion, but the *prime* always inverts to the *octave* (one or more octaves). The *octave* may invert to an octave; thus:



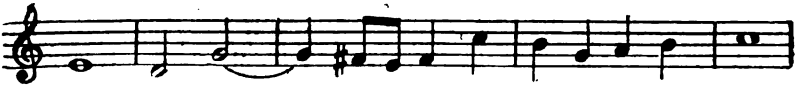

The transposition from *octave* to *unison*, and from *unison* to *octave*, necessarily ranks as an *inversion*, yet without being a transfer *from one side to the other*, and is devoid of that essential harmonic change of relation between the voices that results from all the other inversions.

Besides the octave-inversion, it is possible to invert by any other interval, either less or greater than the octave. Of all other inversions the commonest in use are the inversions of the *tenth* and the *twelfth*, thus:

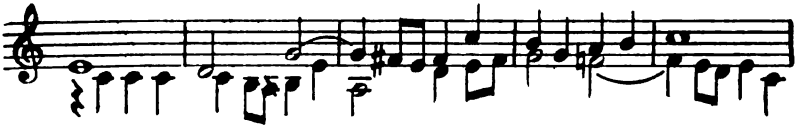



The explanation of inversion properly belongs to the subject of Harmony as it relates to certain harmonic relations of tones; but the *application* of inversion belongs only to the higher forms of musical composition. Yet as a matter of interest to the student, and to give him a better understanding of the subject, the use of inversion will be briefly explained.

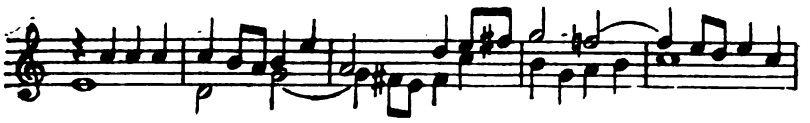
Suppose we have a short melodic phrase in one voice, like the following:



to which we wish to add an accompanying voice, thus:



If this accompanying part be written according to certain laws that pertain to this sort of composition, it can serve not only to accompany the first voice in its present position, but also if one or the other of the two voices be *inverted* throughout by an octave, thus:

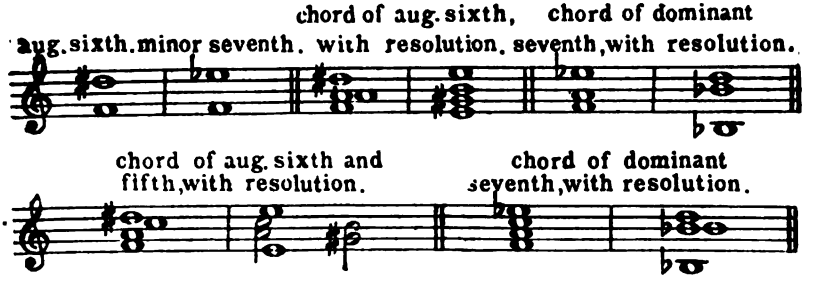


this secures new harmonic effects throughout, while the voices themselves are identically the same. This is one of the arts of the composer for gaining *new effects* with *old material;* that is, securing *unity* and *variety*, the two fundamental requisites of every composition.

The foregoing sufficiently explains the purpose of inversion, whether by the octave, which is the most common, or by any other interval.

(H)

THE IDENTITY AND THE DIFFERENCE OF AUGMENTED SIXTH AND MINOR SEVENTH.



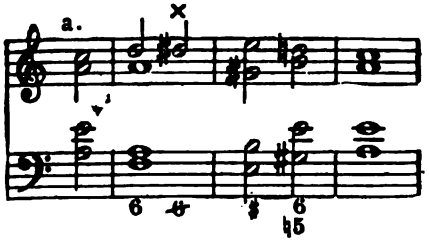

The *ear* knows nothing of *sharps, flats, or naturals.* These signs are simply devices of Notation, so as to express precisely to the eye the relation and interval of tones, as the relation and interval exist to the ear. What we may call the physical distance of D# from F (as above) is precisely the same (for all practical purposes) as the distance of Eb from F. But under some circumstances the ear recognizes this interval as an *augmented sixth,* and under other circumstances as a *minor seventh,* and according as it is felt to be the one or the other, the following progression is thereby determined. This progression differs radically in the two cases, for it is in the nature of an *augmented sixth to lead up a minor second* (i. e., a semitone), and it is in the nature of every *seventh to lead down one degree* (which may be either a *major* or a *minor second*).

The normal resolution of all discords may be said to be *downward*, however inexplicable the fact may be. This is amply illustrated in the "suspension-chords," wherein one sees the constant drawing of the *ninth* down to the *eighth*, of the *sixth* to the *fifth*, of the *fourth* to the *third*, and, in the commonest of all discords, of the

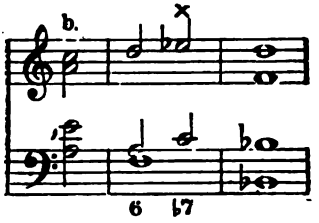
*seventh* to the *sixth.* A strong counterbalancing consideration must therefore exist in that interval which would ordinarily be regarded as a minor *seventh,* neutralizing the natural tendency, and leading from the discordant tone *upward;* in which circumstance the interval is felt to be a *sixth* (of the augmented sort), rather than a *seventh.*

The exceptional treatment of this discord is explained by saying, that the mind constantly recognizes the fact that the coherence and musical sense of successive chords depend largely upon *their flowing in one and the same scale, or only from one scale to another wherein the modulation shall not sever the coherence.*

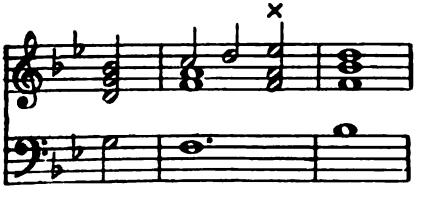
In the following progression the chords *cohere in the same scale,* when the discordant D# *leads up* to E.




The same discord, regarded as a *seventh,* involves in its natural resolution a chord that is out of all coherence with the preceding chords, and necessitates a modulation that is utterly forced and unnatural.

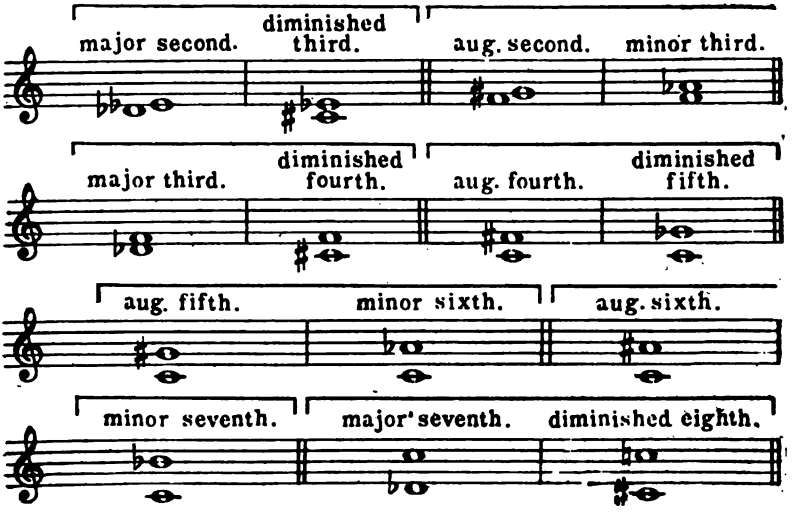



If the passage were in the key of B♭, it would be equally incompatible with the scale to *lead up* from the discordant tone, as at (a), which would *now* be construed as a *seventh,* and resolve as at (b).



To state the matter briefly, the foregoing discord is naturally regarded as a *minor seventh,* but wherever such interpretation leads to an incoherence of the chords, and to a forced modulation, the mind construes the discord as a *sixth* (of the augmented sort). A circumstance which often makes it easier to construe this as an augmented sixth is the fact that the melody frequently leads up to it, and what we may call a melodic momentum in a measure predetermines the upward resolution.

This is only one instance of the mental process of determining the nature of an interval according to the situation in which it occurs. Thus the interval which under some circumstances is a *major second,* under others is a *diminished third;* what is sometimes an *augmented second* is at other times a *minor third;* what is sometimes a *major third* is at other times a *diminished fourth,* etc. The following table presents the various equivalent intervals.

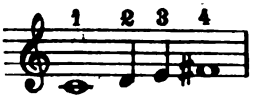



(I)

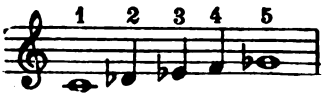
THE ESSENTIAL PRINCIPLE OF NOTATION.

The chapter on "altered chords" brings to our notice certain intervals that are *ambiguous,* i.e., dependent upon circumstances to determine their name. Thus the distance which in some cases is an augmented fifth, is in other cases a minor sixth. The distance of an augmented sixth is often a minor seventh. (For a full list of the equivalent, and therefore ambiguous intervals, see Appendix (H) ). The question is often asked, why a given interval is expressed in notation as it is, and the answer commonly given is, "to conform to the

principles of Notation;" which leaves the enquirer no wiser than before, but inspires within him a proper awe in view of the mysterious "principles of Notation." There is but *one essential principle of Notation,* and that a simple one, viz., *to express the relations of tones to the eye exactly as they exist to the ear.* In determining intervals between tones, the ear *moves along the steps of the diatonic scale.* These steps of the scale are expressed to the eye by the lines and spaces of the staff, and there must be as many intervening lines and spaces as there are intervening steps of the scale. To illustrate this, suppose two tones are heard, which we will call C—F#,




and supposing the scale of G to be already established in the mind, the ear moves in that scale through tones which we call D and E, so that the interval is expressed in notation, c—d—e—f#, *a fourth.* But again, supposing the scale of D♭ to be already in the mind, then the ear will move in that scale, and the interval is expressed in notation thus, c—d♭—e♭—f—g♭, a *fifth.*




This illustrates the one essential principle of Notation. The *real* relation is that which the ear hears, and the notation is accurate when the *eye sees as the ear hears.*